4TH ANNUAL INJURY IN ALBERTA CONFERENCE

Supported by the Occupational Health and Safety Heritage Grant Program

Heritage Fund

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FINAL REPORT

Submitted to:

Occupational Health & Safety

HERITAGE GRANT PROGRAM

By:
Injury Awareness & Prevention Centre

EXECUTIVE SUMMARY

The 4th Annual Injury in Alberta Conference was attended by approximately 220 participants. Positive feedback from the participants and the number of conference registrants were both indicators of the conference's success. Conference strengths as identified by conference participants were:

- the networking possibilities
- the quality of the speakers
- the format and quality of the organization of the conference
- the action oriented focus of the conference.

Seventy percent of respondents from the Occupational Health and Safety workgroup rated their workgroup facilitators very good to excellent.

Major presentations were provided by Ms. Maureen Shaw, Dr. Herb Buchwald, Dr. Hugh Walker and Mr. Dave Gibson. Conference participants were given the opportunity for a question and answer session following each of the major presentations. A general discussion was then conducted to assist participants in identifying and priorizing injury objectives as outlined in the document "A Safer Canada, Year 2000: Injury Control Objectives for Canada". Subsequent to this discussion the workgroup divided into three smaller workgroups to address individual objectives. Workgroup facilitation was provided by the aforementioned as well as Ms. Susan Ruffo, Ms. Deborah Smith, Ms. Ruth Nielson and Ms. Carol Eamer. The focus of each workgroup was as follows:

Group 1: the development and implementation of health and safety programs at workplaces with six or more workers - using social marketing as a major strategy.

Group 2: the reduction of occupational injuries in Alberta by 30% by the year 2000 - using social marketing as a major strategy.

Group 3: the development of health and safety programs at workplaces with six or more workers - using information sharing, incentive programs and networking/coalition building strategies.

Action plans were developed by each of the three workgroups.

* The final report details workshop activities, highlights from the keynote speakers and action plans developed during the course of the conference. A copy of the participants' evaluation, participant materials and a final budget summary is also enclosed.

4th ANNUAL INJURY IN ALBERTA CONFERENCE
OCCUPATIONAL HEALTH AND SAFETY WORKSHOP SESSIONS

REPORT OF WORKSHOP ACTIVITIES

Thursday, October 22: 09:45 - 12:00 Noon: Concurrent Workshops:
(All Occupational Health and Safety Workshop Session Registrants together)

SPEAKERS/RESOURCE PERSONS:

- Ruth Nielsen, Moderator
- Maureen Shaw
- Herb Buchwald
- Vern Millard
- Hugh Walker
- Dave Gibson

PROCESS:

- Presentation: What's New Internationally (Maureen Shaw)
- Presentation: The Canadian Scene (Herb Buchwald)
- Presentation: Occupational Health and Safety Initiatives in Alberta (Vern Millard)
- Presentation: The Alberta Situation (Hugh Walker)
- Presentation: Review the OH&S Objectives in the Year 2000 Report (Dave Gibson)
- Identify a sub-set (4-6) of the Year 2000 Objectives relevant to Alberta and achievable in the near future and of particular interest to the participants (discussion of potential strategies will start)
- Identify participants willing to work on each of the selected objectives

PRESENTATION: What's New Internationally

MAUREEN SHAW: Maureen is a past Chair of the Alberta Minister's Advisory Council on Occupational Health and Safety and is the past chairman of the Council of Governors of the Canadian Centre for Occupational Health and Safety. She is now the principal of MCS International. Maureen has been active in increasing public awareness of occupational health and safety across Canada and has been appropriately described as "an agent for change" and "a lady with a vision."

TEXT OF THE PRESENTATION:

Internationally, as in Canada, we are in a period of awakening that is very exciting , while at the same time we are faced with crisis.

The awakening is the recognition of the need for, and benefits of, INTEGRATION at the levels of policy development, legislation, program development, training and education. AWAKENING means the recognition of the need for the transference of POWER to community (community being individuals, groups, organizations). Hence, the increasing emergence of volunteer organizations and coalitions. There is growing recognition that we can no longer rely upon government, which will further facilitate the growth of non-government organizations.

The crisis internationally is no different that what we are facing in Canada:

- Lack of clear focus and direction
- Constant downsizing as a reflection of the global recession, and
- Lack of funds for current programs--never mind new ones.

Everywhere, people are scanning beyond their borders to see what others are up to. Is there anything new?

What seems to me to be very exciting is the interest world-wide in sharing information, learning from each other. Clearly, however, while many exciting discussions are taking place, we are at a point where money--or lack of it--is going to make the difference in the near future.

In Alberta, I have a real concern that soon we will wake up and realize that the recession has taken its toll on organizations and its people and equipment. For example, the Junior Oil Companies seem to be flourishing by acquiring de-valued equipment from the Majors which are eager to divest themselves of these liabilities. Unless we manage to bring these companies along, we will see the results in another five years.

What's happening around the world? Despite the current stresses there are positive things happening.

In Europe, the European Commission has set 1992 as the European Year of Safety, Hygiene and Health Protection at Work. The year is being used as an opportunity to raise awareness, to educate, to commit to the future.

The **European Foundation for the Improvement of Living and Working Conditions** has as its Guiding Principals the following:

- The "working environment" includes not only the physical setting but also the organizational and social surroundings.

- Health is not merely the absence of accidents and illnesses but the presence of a complete state of physical , mental and social well-being.

- preventive action is preferable to corrective action, is easier and less expensive, and must be taken at the *design stage* of work systems, building, equipment and work-stations.

- Improvement of health and safety at work demands changes in *behaviour* as well as changes in the *environment.*

- The involvement of workers/users in introducing change is indispensable.

- Improving working conditions pays.

For a start, I would like to see **Canada** fully commit to a similar set of principals that have been developed and agreed to by the governments, business and labour.

International Harmonization of Chemical Hazard Communication requirements and the development of International Standards is on the agenda of the **I.L.O./W.H.O.** and discussions are taking place. These discussions will take some time. A colleague with one of the principal international organizations told me that unless they can receive more support they will take considerable time. These changes that surely must take place are being done with existing resources only.

Dorothy Struck, Acting head of the **U.S. Occupational Safety and Health Administration** (OSHA), stated in a recent presentation in Australia that OSHA is actively working towards this end and views world harmonization as beneficial to worker and public protection as well as facilitating chemical trade. The U.S. is also talking about continental harmonization and co-operation.

The co-ordination of the activities of various international organizations is to be undertaken by the **International Program on Chemical Safety (IPCS).**

- **IPCS** - Created in 1980, is a joint venture of the United Nations Environment Programme, the International Labour Organisation and the World Health Organization. Its main objective is to assess the risks to human health and the environment posed by chemicals, thus providing internationally evaluated scientific information which countries can base their chemical safety measures.

- **INTOX** - a computerized database management system for poison information centres, has been developed by the International Programme on Chemical Safety (IPCS) in association with the Canadian Centre for Occupational Health and Safety (CCOHS) and the Centre de Toxicologie du Quebec (CTQ). It is an outcome of the international IPCS/IDRC/CCOHS/CTQ project of the same name.

- The INTOX package is directed towards the needs of the information room of a poisons information centre, particularly in developing countries. It was soon realized that developed countries did not have that information either.

- As well, from IPCS, now on CD ROM, through CCOHS
  - International Chemical Safety Cards (MSDS)
  - Environmental Health Criteria Documents

Australia: The Australian approach has standards and the framework for handling occupational health and safety issues established nationally through the National Commission. The Commission is tripartite, involving state, territorial and commonwealth governments, employers and unions--Work Safe Australia.

In November, 1991, the Premiers and Ministers of Labour set December, 1993 as the target for uniform occupational health and safety standards and standards relating to dangerous goods. Following the position of the European Community, there was mutual agreement that recognition alone as a principle did not satisfy occupational health and safety needs.

The National Commission and Worksafe Australia have four complementary and coordinated processes to seek the maximum degree of uniformity with respect to:
- the harmonization of existing standards;
- the development of new standards;
- general occupational health and safety legislation; and
- dangerous goods legislation.

Australia has developed a "World's First" --the National Data Set--a uniform, national coding and classification system for W.C.B. systems. The system includes definitions of scope, collection methods and data, a coding system with consistent training and guidelines, and a central decision making system/register provided by Worksafe. The outcome, according to Ted Emmett, C.E.O. of Worksafe, will be comprehensive national data covering all worker' compensation, allowing a variety of valid comparisons. Implementation if well on its way.

Another interesting model in Australia is emerging for delivery of services. It has Workers' Compensation authorities and the authorities responsible for prevention and enforcement located within one agency (not unlike the British Columbia model). It is seen to enhance communication and collaboration and is paid for through the W.C.B. assessment system. I did not sense the same intensity of concern that I do here regarding the potential loss of focus and identity of occupational health and safety to its more powerful brother "compensation".

We (Canada) are seen as leaders in a number of areas by our Australian cousins. Namely: WHMIS (our system along with the U.K. system provided the models for their new system). While in Australia, I participated in a round table discussion--most of the questions centred on WHMIS. "Is it working?" "What changes would you make?" They are also very

interested in MIACC, the Major Industrial Accident Council, as a model for multi-sectorial approach to preparedness, prevention and mitigation of major industrial disasters. MIACC is the world-leading model. (The whole question of the prevention of major industrial disasters is also being discussed by the I.L.O. with the draft International Code under discussion at this year's I.L.O. Convention. Next year MIACC is playing a major role.)

Australia is also very interested in our work in injury prevention and in the creation of a social movement. Following one of my keynote presentations where I discussed the IAPC and Injury Prevention Foundation and the "Hero's" program, I was besieged with questions and was invited to be the guest on a morning radio talk show.

I find it a sad irony that as we are reducing our national facilitation work by organizations such as CCOHS, other countries are taking the model (particularly our information/enquiries service) and using it for developing their systems.

Thailand: In Thailand, the CCOHS National Inquiry Service is being used to develop their system. They have until now focused the efforts of their National Centre on engineering approaches.

Japan: In Japan, they are very interested in our MIACC approach, "Hero's", and our communications systems. Japan is probably leading the world in making safety an integral component of the cultural and values of organizations on the job and off. Dr. Kiyotsuigu Saka, of the Japan Chemical Industry Association and Mitsubishi Kasei Corporation, says that the key to improvement is the whole person and that we must use all the strengths of psychology, behavioral science, and human engineering. Dr. Saka says that we must work to reach HIYARI-HATTO: more and more eyes and minds watching, identifying.

Indonesia: I will just mention one last country, and that is Indonesia. Indonesia has a major transformation in its health problems along with the industrial.transformation of the past few years. While we think we have challenges, and we do, imagine the magnitude of the challenges facing our colleagues in developing nations. We are exporting our industrial system, and with them, problems that the local culture is unequipped to deal with. I recently had the opportunity to discuss this transformation with Dr. Unar Achmadi, Professor and Chairman of the Department of Environmental Health and Occupational Health, Faculty of Public Health, University of Indonesia. Certainly, there have been marked improvements in the incidence and prevalence of many acute communicable diseases. At the same time they are seeing the emergence of what they call "new health risks." Occupational health problems are becoming very prominent among the general population--not just the workers. Infant mortality has been reduced from 142/1,000 live births in 1971 to 54/1,000 in 1990. However, injuries are now the fourth leading cause of childhood deaths (technology). Poisoning alone accounts for more infant deaths than diphtheria, pertussis and tuberculosis combined. Pesticide poisoning amongst children accounts for a high percentage of the deaths. The plea from Dr. Achmadi was real, emotional and clear. "We must have a global strategy for health problems related to industrialization." The rapid development in industrial

activities in Indonesia is directly related to foreign investment and technology." He says that we have a tendency to be concerned about the environment because it has become a global issue. Occupational health and safety on the other hand is "another" issue. "Exported technologies as part of package of investment from developed and rich countries to the developing countries also means spreading occupationally-related disease." We do have a responsibility to be "responsible and accountable" in our trading and investing policies in less developed countries as well as at home. Often, however, there is much to learn from their approaches. This is one of the reasons we need to have shared systems to gather and disseminate information.

The **AWAKENING** that is taking place provides us with the opportunity to meet the crisis for a while, but we are going to face the music down the road as a result of the lack of resources we have committed. It is time to go back and take a hard look at what we are doing. I would like, as a start, to see Canada develop a set of guiding principals similar to those of the European Commission that I mentioned earlier. This should be developed jointly by labour, business, governments and the public, and adopted by all the provinces--again with the multi-sectoral commitment. Then we can start again to build, based on a shared vision for the future. Based on recent discussions in Australia and Europe representing the Canadian Centre for Occupational Health and Safety, Maureen Shaw will provide insight into projects and directions taking place. She will touch on such areas as the International Program on Chemical Safety (IPCS--a project of the I.L.O., W.H.O., AND U.N.E.P.) and approaches to injury prevention in Australia and Japan. She will also discuss how Canadian approaches such as the Major Industrial Accident Council, Canadian Centre for Occupational Health and Safety, the Injury Prevention Foundation and Alberta's Partnerships Program are having an impact and generating interest internationally.

PRESENTATION: The Canadian Scene

DR. HERB BUCHWALD: Herb Buchwald, or "Dr. B." as he is known to many occupational health and safety people in Alberta, recently returned to Alberta after spending more than three years as General Manager of the Health Care Occupational Health and Safety Association in Ontario. He is one of the first occupational health professionals to come to Alberta, being recruited in 1964 to set up the occupational hygiene service and the laboratory for the fledgling government program. From 1975 to 1988 he was the Assistant Deputy Minister, then Managing Director of Alberta Occupational Health and Safety. He is now an Adjunct Professor with the Occupational Health Program, Faculty of Medicine at the University of Alberta. He counts activities with the Canadian Standards Association, the Canadian Council on Protective Equipment and several professional groups among his many interests.

HIGHLIGHTS OF THE PRESENTATION:

Canadian occupational health and safety is a "mosaic of mosaics" and finds itself is competition with other issues, including the volatile economy, the national debt and the Canadian Unity debate.

During the past few years, the Canadian annual workplace death rate has dropped by more than 35 percent to about 7 per 100,000 workers, and compensable injuries have gone down by more than 20 percent to less than 9.5 per 100 workers. Can this trend continue? Some current issues that relate to, and must be addressed in parallel to, this trend include:

- WHMIS and the future of chemical hazards;
- Economic pressures and competing priorities;
- Quality improvement, stress and the ageing population;
- Multiculturalism, multilingualism, literacy and worker rights; and
- New technologies and societal expectations.

With respect to occupational injury and illness statistics, the National Work Injury Statistics Division of Statistics Canada produces a compilation of Workers' Compensation statistics across Canada. There is a need for greater harmonization of this data and for it to be adaptable to changing needs. It is particularly deficient in the statistics on work-related illness. To overcome some of these present limitations, a project has been established with the Canadian Standards Association to establish a code for reporting work injury and illness statistics.

WHMIS is a good example of a joint federal/provincial/territorial initiative which has standardized one aspect of occupational health and safety law across Canada. There is a need to evaluate the effectiveness of WHMIS.

The Canadian jurisdictions have embarked on a process of further harmonizing occupational health and safety standards. Regulations respecting confined space entry and personal protective equipment are the first to be examined.

The Conference on Protective Equipment will be combining with the Canadian Standards Association to ensure ongoing attention to protective equipment.

Training of Occupational Health and Safety Officers (of government regulatory authorities) is seen as an important issue, as the nature of workplace hazards changes, new standards emerge and roles evolve.

The effectiveness of Joint Workplace Health and Safety Committees continues to be an issue, with the need for training of committee members being recognized as a critical issue.

PRESENTATION: Occupational Health and Safety Initiatives in Alberta

VERN MILLARD: Formerly the Chairman of the Energy Resources Conservation Board, Vern is the author of the "Millard Report" on the Alberta Workers' Compensation Board, Following acceptance of report, he was appointed as Chairman of the Board of the Alberta WCB. His vision has led the WCB into a new era of programs to reduce workplace injuries and has pioneered preventive programs, including innovative partnerships and incentives.

HIGHLIGHTS OF THE PRESENTATION:

Analysis of Workers' Compensation Board claims data reveals that a disproportionate number of claims come from some industry sectors.

For several years, the lost time injury rate in Alberta has been near 5 per 100 man years worked.

One of the most important initiatives adopted by the WCB in 1989 was the decision to play a role in promoting the reduction of workplace injuries.

A target of 3.5 lost time injuries per 100 man years worked has been established for the year 2000.

In partnership with Alberta Occupational Health and Safety, employers, workers and safety associations, the WCB has developed pilot work injury reduction programs.

Currently, there are some 450 employers, 120,000 workers and four safety associations participating in this program.

PRESENTATION: The Alberta Situation

DR. HUGH WALKER: Hugh has been the Managing Director of Alberta Occupational Health and Safety for the past three and one half years. Under his leadership, AOHS has developed bold new programs, including the "Partnership" program with Alberta industries and new ties with the Workers' Compensation Board. With a background in economics and a particular interest in the economics of the health care system, Hugh has championed the cause that "occupational injuries must come to be regarded as socially unacceptable, and has led AOHS in the development of coalitions which are moving toward this objective.

HIGHLIGHTS OF THE PRESENTATION:

The most important occupational health and safety issue before us is **social change.** We must make work-related injuries socially unacceptable to Albertans.

Creating **safe communities** is one way of achieving that goal.

In Alberta, there are about 2.4 million people, and over one million of those are in the workforce.

Recent progress has been made in reducing occupational injuries in Alberta. Based on the most recent Workers' Compensation claims statistics, lost time injuries have decreased from 5.0 per to 4.4 per 100 man years worked. This is a 12 percent reduction over the previous year or a reduction from 45,000 lost time claims to 38,000 claims. Of those, about 3,000 resulted in workers becoming disabled.

This human toll and economic cost cannot continue. New approaches are required. Public awareness and social change will be the moving forces behind additional improvements.

Partnerships and joint ventures, with the leverage they can provide will become increasingly important. Recent initiatives such as safe community projects, partnerships with stakeholder groups and coalitions to deal with specific injury prevention are noteworthy.

In response to these changing times. the role of government regulatory authorities is changing with more emphasis on voluntary compliance, incentives and education and less on enforcement and prosecution, except in cases of flagrant violations. Limited resources in the future will also require increased workplace responsibility.

Health and safety has traditionally been considered to be a "blue collar" issue. Often, the victim was blamed for the injury--its their own fault, they were not responsible enough, did not wear protective equipment, etc. There has been little perception of the cost of the problem, the sources of injury, or the remedies available, including training and participation by workers. These attitudes have to change.

Our goal must be to **raise occupational health and safety on the public agenda.**

In the future, how will be deliver occupational health and safety services?

Traditional approaches have been:

- one on one inspections,
- enforcement,
- a focus on safety rather than health,
- Occupational Health and Safety Officers selected from the trades,
- reactive priorities, and
- focus on fatalities.

Future strategies must include:

- one on many/education,
- promotion and consultation,

- health,
- community and family focus,
- getting the message into schools and shopping centres,
- incentives,
- pro-active,
- disability related to injuries becoming a social issue, and
- partnerships/leverage.

Partners in the future will be:
- business and labour,
- industry associations,
- safety equipment manufacturers
- medical/health care,
- fire/police,
- other government agencies, and
- people in the business of health and safety.

We will need to push harder--to find some non-traditional partners:
- safe community groups,
- communities/families/women,
- libraries/schools/community centres, and
- children influencing their parents.

How can we get these partners to work with us? By **social marketing.**

PRESENTATION: Review of the Occupational Health and Safety Objectives in the Year 2000 Report: "A Safer Canada--Year 2000: Injury Control Objectives for Canada"

DAVE GIBSON: After 25 years with Alberta Occupational Health and Safety, Dave recently left government to set up a consulting practice. He specializes in helping worksites deal their health and safety issues through the development of occupational health and safety programs and the evaluation of the effectiveness of those programs. While with the government he was the Director of the Occupational Hygiene Branch for 12 years and the Director of Education and Promotion Services for four years. He was the chairperson of the national working group which last year developed the workplace injury reduction objectives for the document: "A Safer Canada--Year 2000: Injury Control Objectives for Canada.

HIGHLIGHTS OF THE PRESENTATION:

In a series of teleconferences and a two day symposium in May, 1991, the Occupational Injuries Working Group developed the workplace injury reduction objectives which have now been published in the document: "A Safer Canada--Year 2000: Injury Control Objectives for Canada." The following is a summary of those objectives:

Issues Related to Setting Objectives:

1. Inappropriate Attitudes
   - OH&S separate from "real" lives
   - Injury is a natural/expected part of work
   - Purpose of health care system is to respond to injury

2. Lack of information about injuries, illnesses, deaths, and their causes.

3. Well informed workers are less likely to be injured.

4. Health also needs to be protected.

5. OH&S programs needed.

Establishment of statistical baselines in a number of areas is a necessary requirement to:
- measure current levels, and
- track changes in performance.

Objectives: A. Data Improvements

1. Optimize the use of current Canadian data sources by improving standardization.

2. Identify and develop additional data systems for occupational diseases and cumulative trauma disorders.

Objectives: B. Education and Information Improvements

3. Increase coverage of occupational injuries and illnesses in educational programs for all health care practitioners.

4. Increase training opportunities for health and safety practitioners.

5. Include recognition of OH&S hazards in engineering and business curriculae.

6. Make OH&S information available at workplaces.

7. Increase availability of low literacy and second language OH&S materials.

8. Establish high school "work-proofing" programs.

9. Establish baseline data for items 3 to 8.

Objectives: C. Occupational Exposure Standards

10. Establish baseline exposure for occupational hazards where Occupational Exposure Limits exist.

11. Reduce exposure to known occupational health hazards.

12. Review existing Occupational Exposure Limits.

13. Develop uniform national Occupational Exposure Limits.

14. Adopt the uniform national Occupational Exposure Limits.

15. Develop Health and Safety Programs for workplaces with 6 or more workers.

16. Develop back injury prevention programs.

17. Develop baseline data for 15 and 16.

Occupational Health and Safety Objectives

1. Reduce the national rate of deaths from work-related causes by 30%. (8.2 to 5.7 per 100,000 workers per year)

2. Reduce the number of lost-time injuries from all work-related causes by 30%. (613,836 to 429,685 injuries per year)

3. Reduce jurisdictional rates of injuries by 30% in high risk and 15 % in low risk industries.

4. Reduce the jurisdictional rate of work-related back injuries by 30%.

GROUP PROCESS:

Following questions and discussion, participants identified objectives that they were particularly interested in working on. Participants were divided into three small groups for detailed examination of one of the objectives during the following two workshops periods.

Thursday, October 22: 14:45 - 16:30: Concurrent Workshops:

FACILITATORS FOR SMALL GROUPS:

- Susan Ruffo
- Deborah Smith
- Ruth Nielsen
- Carol Eamer

RESOURCE PERSONS:

- Maureen Shaw
- Herb Buchwald
- Dave Gibson

GROUP PROCESS:

- Occupational Health and Safety Workshop Registrants allocated to smaller groups
- Each small group to work on goals specific to its selected Year 2000 Occupational Injury Reduction Objective
- Goals must be relevant to Alberta, achievable in the near future (next 1-2 years), and observable/measurable (discussion of potential strategies will continue)

RESULTS:

Each of the three small groups met and started discussion of its occupational injury reduction objective.

Friday, October: 09:15 - 11:15: Concurrent Workshops:

FACILITATORS FOR SMALL GROUPS:

- Susan Ruffo
- Deborah Smith
- Ruth Nielsen
- Carol Eamer

RESOURCE PERSONS:

- Maureen Shaw
- Herb Buchwald
- Dave Gibson

GROUP PROCESS:

- Occupational Health and Safety Workshop Registrants allocated to smaller groups
- Each small group to work on activities specific to its selected goals for its Year 2000 Occupational Injury Reduction Objective
- Activities must be relevant to Alberta and must be demonstrably supportive of the Year 2000 Objective (discussion of potential strategies will firm up)
- Each activity must have a leader, contact, focus group or champion identified to implement the activity
- Each small group to report back to the Occupational Health and Safety Workshop at the end of the session with formalized action plan, including identification of key stakeholders, overall timeline for the activities and outline of measurement approach (All Occupational Health and Safety Workshop Registrants together)

RESULTS:

Each of the three small groups continued discussion of its occupational injury reduction objective, and developed an action plan for achieving the goals the group had established for the injury reduction objective.

Each small group reported back to the Occupational Health and Safety Workshop with its plan.

Friday, October 23: 11:15 - 12:00: Presentations from Workgroups:
(Conference Plenary)

RAPPORTEUR:
- Dave Gibson

GROUP PROCESS:

A report from the Occupational Health and Safety Workgroup to the whole Conference.

RESULTS:

GROUP I:

Objective:

Develop and implement health and safety programs at workplaces with six or more workers.

Goals:

Get a commitment from workers and employers:
- want to develop and change the community "culture" to a safe community culture. We see safe and healthy workplaces as an integral part of a safe community.
- occupational health and safety practitioners can no longer work in isolation, so welcome the safe community concept.

Strategies:

Among many, we highlight:
- changing attitudes and behaviours of "workplaces" (includes all those involved ate workplaces).
- need to measure - we* will be asking the Injury Awareness and Prevention Centre to:
  - include workplace health and safety programs as a component of the measurement of safe community effectiveness and evaluation.
  - we* will provide the technical input into this measurement tool

* "we" includes:
  - staff of Alberta Occupational Health and Safety
  - staff of the Workers' Compensation Board--Alberta
  - Alberta Workers' Health Centre
  - program managers at worksites
  - etc.

GROUP II:

Objective:

Reduce occupational injuries in Alberta by 30% by the year 2000.

Goal:

Increase the number of people who say that they are aware of Alberta Occupational Health and Safety legislation to 80%.

Strategy:

Social marketing: public awareness/change a social value

Activities:

- Advertising
  - specific age groups — *Doris and Tee*
  - positive approach
- Education
  - schools
    - high
    - junior high
    - via curriculum
  - Specific-employer based (high risk industries) — *AOHS**
  - Employer association-based
  - AOHS, unions, Apprenticeship Board, Advanced Education, School Boards, Home and School Associations, Workers' Health Centre
- Displays
  - at public events — *Kathy/IAPC***
  - safe community network
- Game
  - use at displays — *Lynda/Brian/Tom*
  - computer-based
  - interactive video
  - board
  - make safety fun
  - development: incentive to kids
  - problem-solving approach
  - students, computer companies, teachers, video companies, AOHS*, Canadian Centre for Occupational Health and Safety

* AOHS - Alberta Occupational Health and Safety
** IAPC - Injury Awareness and Prevention Centre
italics - Names of persons with follow-up responsibility

GROUP III:

Objective:

Develop and implement health and safety programs at workplaces with six or more workers.

Stakeholders:

- Industry Associations
- Workers' Compensation Board--Alberta
- Alberta Occupational Health and Safety
- Safe Communities
- Workers' Health Centre
- Injury Awareness and Prevention Centre

Strategies:

1. Identify a Central Clearing House
   - list partners
   - resources
   - data
   - guidelines
   - programs
   - media/videos, etc.

   Forum For Action on Workplace Health and Safety, Injury Awareness and Prevention to help identify.

2. Universal Incentive Programs
   - Workers' Compensation Board--Alberta and Alberta Occupational Health and Safety exchange existing criteria

3. Innovative Networking and Coalition of Partner Groups
   - Associations partnering with each other
   - Schools
   - Community Organizations

   In order to foster attitude/behaviour changes, to pool resources, and to share information.

APPENDIX 1

4th Annual Injury in Alberta Conference
Executive Summary

Received 57 completed evaluation forms out of a possible 190 (pre-conference registration count). A response rate of 30%.

• 97.9% of responses indicated a rating of very good to excellent for the overall program.

• 90.4% of responses indicated a very good to excellent rating for Dr Leif Svanstrom's presentation at the open lecture, Creating Safe Communities.

• 98.1% of responses indicated a rating of very good to excellent for Dr Robert Conn's presentation at the opening plenary, Safe Communities: The Canadian Perspective.

• 85.1% of responses indicated a rating of very good to excellent for the Panel Plenary Session, What works in Preventing Injuries.

• In response to the question, what did you like most about the program?, there were four recurring themes throughout the evaluations:

- the networking possibilities of this conference
- the quality of the speakers especially Dr. Svanstrom, Dr. Conn, and Captain Vanderbrink
- the format and quality of the organization of the conference
- the action oriented focus of this conference

There was also several comments on the value of the contact with the native population and the issue surrounding this population.

•Responses to what delegates would like to see changed for future conferences were very diverse. The following are the items that there was some degree of agreement on.

- more workshop time/discussion time
- the idea of comprehensive coordination or multisectorial workshops - the challenge to work together
- ideas for action - moving motivation from an individual level to a community level
- more displays on community based projects
- more networking time - longer breaks
- Native focus
- reports on what we have accomplished since last conference
- person's affiliation bigger on name tags

• All elements of the conference were rated extremely highly.

• Rating of workgroup facilitator/s were as follows:

- •Transportation - 100% of respondents rated this group very good to excellent.
- •Sports/Recreation - 100% of respondents rated this group very good to excellent.
- • Home & Community - 90% of respondents rated this group very good to excellent.
- •Native - 77.7% of respondents rated this group very good to excellent.
- • Occupational - 70% of respondents rated this group very good to excellent.
- • Violence -66.6% of respondents rated this group very good to excellent.

• 38.6% or respondents heard about the conference from the IAPC News and 22.8% from the conference brochure.

The 4th Annual Injury in Alberta Conference
Summary of Evaluations

Received 57 Evaluations out of a possible 190 (Pre Conference registraiton count). Response rate of 30%.

Transportation -	**11**
Sports/Recreation -	**7**
Home and Community -	**10**
Native -	**9**
Occupational Health -	**10**
Violence -	**3**
Not Specified -	**7**

Questions 1 to 4, 7 and 8 were responded to according to the four part scale of 1 to 4 with 1 being poor and four being excellent.

1. Where on the scale would you rate the overall program?

Responses 48/57 = 84.2% of these
30/48 or 62.5% rated the Conference at 3
17/48 or 35.4% rated the Conference at 4.

2. The open lecture, Creating Safe Communities? (Dr. L. Svanstrom)

Responses 31/51 = 54.9% of these
14/31 or 45.2% rated the open lecture at 3
14/31 or 45.2% rated the open lecture at 4.

3. The opening plenary, Safe Communities: The Canadian Perspective? (Dr. R. Conn)

Responses 54/57 = 94.7% of these
10/54 or 18.5% rated the opening plenary at 3
43/54 or 79.6% rated the opening plenary at 4.

4. The Panel Plenary Session, What works in Preventing Injuries?

Responses 47/57 = 82.4% of these
7/47 or 14.9% rated the panel plenary at 2
29/47 or 61.7% rated the panel plenary at 3
11/47 or 23.4% rated the panel plenary at 4.

5. What did you like most about the program?

In response to this question there were four recurring themes throughout the evaluations:

- the networking possibilities of this conference
- the quality of the speakers especially Dr. Svanstrom, Dr. Conn, and Captain Vanderbrink
- the format and quality of the organization of the conference
- the action oriented focus of this conference

There was also several comments on the value of the contact with the native population and the issue surrounding this population.

6. What would you like to see changed for future conferences?

Responses to what delegates would like to see changed for future conferences were very diverse. The following are the items that there was some degree of agreement on.

- more workshop time/discussion time
- the idea of comprehensive coordination or multisectorial workshops - the challenge to work together
- ideas for action - moving motivation from an individual level to a community level
- more displays on community based projects
- more networking time - longer breaks
- Native focus
- reports on what we have accomplished since last conference
- person's affiliation bigger on name tags

7. How would you rate these elements of the conference?

Registration
Responses 55/57 = 96.5% of these
22/55 or 40.0% rated the Conference at 3
30/55 or 54.5% rated the Conference at 4.

Schedule/Agenda
Responses 54/57 = 94.7% of these
33/54 or 61.1% rated the Conference at 3
21/54 or 38.9% rated the Conference at 4.

Workshops: Length
Responses 53/57 = 93% of these
29/53 or 54.7% rated the Conference at 3
19/53 or 35.8% rated the Conference at 4.

Workshops: Format
Responses 51/57 = 89.5% of these
6/51 or 11.8% rated the Conference at 2
29/51 or 56.9% rated the Conference at 3
15/51 or 29.4% rated the Conference at 4.

Displays
Responses 56/57 = 98.2% of these
30/56 or 53.6% rated the Conference at 3
25/56 or 44.6% rated the Conference at 4.

Meeting Rooms/Hotel
Responses 56/57 = 98.2% of these
31/56 or 55.4% rated the Conference at 3
24/56 or 42.9% rated the Conference at 4.

Food
Responses 53/57 = 93% of these
19/53 or 35.8% rated the Conference at 3
33/53 or 62.3% rated the Conference at 4.

Hotel Staff & Service
Responses 49/57 = 86% of these
19/49 or 38.8% rated the Conference at 3
30/49 or 61.2% rated the Conference at 4

The Blame Game
Responses 28/57 = 49.1% of these
9/28 or 32.1% rated the Conference at 3
18/28 or 64.3% rated the Conference at 4

8. How would you rate your workgroup facilitator/s?

Transportation
Responses 11/41 = 27% of these
2/11 or 18.2% rated their facilitator at 3
9/11 or 81.8% rated their facilitator at 4

Sports/Recreation
Responses 7/19 = 37% of these
4/7 or 57.1% rated their facilitator at 3
3.7 or 42.9% rated their facilitator at 4

Home & Community
Responses 10/41 = 24.4% of these
5/10 or 50% rated their facilitator at 3
4/10 or 40% rated their facilitator at 4

Native
Responses 9/27 = 34% of these
2/9 or 22.2% rated their facilitator at 2
4/9 or 44.4% rated their facilitator at 3
3/9 or 33.3% rated their facilitator at 4

Occupational Health
Responses 10/36 = 28% of these
1/10 or 10% rated their facilitator at 2
3/10 or 30% rated their facilitator at 3
4/10 or 40% rated their facilitator at 4

Violence
Responses 3/19 = 16% of these
1/3 or 33.3% rated their facilitator at 2
1/3 or 33.3% rated their facilitator at 4

Additional comments.

Transportation

I feel inspired. Thank you!!

A break at noon for exercise/fresh air would be appreciated. Some of the sessions too long!! ie Friday a.m. 9:15-11:15 - difficult to stay motivated - no break - comfort important.

Herb Simpson is an extremely intelligent and knowledgeable about his topic, well organized and humerus as a facilitator.

Thank you for bringing in Herb Simpson - he is excellent. We need his and others expertise to inspire the group! Please put the names of the participants - first and last name in large print.

Most informative. Excellent content. Dr. Herb Simpson - excellent.

Very knowledgeable, good at perceiving the gist of questions or statements from participants.

Sports & Recreation

A well organized, informative conference. I would have liked more interaction with the keynote speakers on an informal basis.

The workshop I attended was very helpful in terms on general ideas and response. I felt that there was a little more emphasis on sport than all recreational pursuits - like play (unstructured). I think "hockey" was used as an example for most of "fair play" info which was helpful but a bit too limiting. "Behaviors" in a recreational or sports setting would have applied to a few more of us - otherwise quite helpful and informative (all of the sessions).

Guy - excellent. 4+ (Workshop 1 & 3) Workshop #2 - our physician was informative re: his job but didn't let workshop members participate till very end. Very poor.

The man from Quebec was very good (Guy). The man from Edmonton was good. Could have gotten a bit more participation from the group, however very good.

Guy was extremely knowledgeable and an excellent facilitator. He provided lots of useful information to take away and apply.

Good work - came away with some valuable information plus good contacts. Liked handouts (great for sharing with other staff). Liked summary booklet (good for finding out about other areas).

Home and Community

I was in the home and community group. I was somewhat disappointed in the narrow focus on burn - however, during the course of discussion, some broader coalition between was touched on. PADIS presentation somewhat duplicated and repetitive. Could have had more discussion around home issues.

Posting the burns and poison groups on the 2nd day was not good for the momentum that had developed in the burns group. The poison lecture (within workshop) was too long and much of what was presented wasn't necessary for this group or our purpose and was much too long. Not a good idea to leave 2 groups meeting in the same room. Not quite enough control when discussing got too long and diverse - otherwise excellent.

For some reason, probably my own oversight, I did not realize that Home & Community was just going to be fire, burn and poison. Overall, the possibility of coming together with people interested in injury prevention is valuable and important.

The first workshop sessions on burns should have been worked on in day two I believe. could have looked for transferrable skills networks, behavior/technology issues. How about more tie in to national objectives? Poisoning diversion not helpful.

Workshop outlines/reference material manual excellent - one suggestion - leave a few blank pages for note taking following each section so all information in one place. Thanks Alberta for leading the way. It's an inspiration to come and see your progress!

International speakers were of lesser caliber than the local (Alberta) and other Canadian presenters.

I was really unclear as to what we were trying to achieve. There was only about one half an hour to plan and the agenda for that had been set.

Native

Disappointed with Native group sessions. Unable to understand the focus or what can or should be happening. I enjoyed attending one session of the sports group and obtained good info to assist us in the Winter Games. I was able to make good contacts with other community people and or plans to meet soon and work collectively and collaboratively.

Need more of a "Take Charge" attitude.

Focus was not on injury prevention.

It was very stimulating to see a new aspect to Health prevention. I had never thought of the tremendous expense involved with injuries.

I would like to see the Blame Game actors present a play on Feelings, Caring - to model - how to give and receive positive feed back, to have an awareness re how to respond when they get negative feed back when they feel hurt, attacked etc. Although they may be aware of their feelings and how to express - many people in their viewing public may not. PADIS was too long. I would rather have worked further in our group.

Handled tactfully.

Occupational Health

Political comments inappropriate.

Great job Dave and Susan!

The facilitator for our work group was excellent. She had a difficult job to keep everyone on track and I believe she did this. Also group members come with very diverse backgrounds so having them reach a common end is a challenge.

That was me. Thumbs down. I wasn't adequately "tuned in" to this group. Had also pre-conceived a notion of what the participants would be concerned with - and I was wrong.

Violence

I felt the Violence and Injury caused by same, workshop was very good in the first session. It carried all types of violence. However I was not aware from the registration info that family violence would be the main topic of discussion. I felt that women's issues took over and there was not much discussion and expertise on other types of violence. Perhaps if the issue is to be family-women related you should indicate this in future when advertising your conference. This is not to say that these issues are not important to myself and society, simply I did not get the type of experience I was expecting. As a result I shopped around and attended some other very interesting discussions. I also assumed Linda MacLeod would lead the entire workshop.

But they continually focused on violence and women when I was expecting a broader view. Concerned that Facilitators presented a tool that they had developed, and we merely previewed it - had hoped to have more input - come away with more specific ideas.

First speaker very dynamic and interesting. The 2 & 3rd workshops were not quite what I had expected. Wanted to look more at what violence strategies across the whole sector would be. I had wished to go further than the level that we had reached.

Not Specified

Guy was excellent. It would have been good to expand on different sports.

Dr. Maria Carey did an excellent job in the injuries to Native group; Leif is an excellent resource who is practical and clear.

Excellent people but felt they brought their agenda with them - choice of group activities influenced direction of group.

How did you hear about the conference? (Please check)

From a Friend -	3	3/47	=	5.2%
IAPC Newsletter -	22	22/57	=	38.6%
Conference Flyer -	13	13/57	=	22.8%
Full Conference Brochure -	6	6/57	=	10.5%

Conference Planning Committee Member -	8	8/57	=	14%
Other -	3	3/57	=	5.2%
No Answer -	2	2/57	=	3.5%

Have you attended a previous Injury in Alberta conference? (Please check)

Yes - 15 15/57 = 26.3%
No - 42 42/57 = 73.7%
How many? 1, 3, 1, 1, 3, 1, 3, 2, 2, all, 1, 2

What topic areas would you like to see addressed next year?

Urban communities i.e. Edmonton/Calgary. - issues/strategies in mobilizing.

Some sort of forum for "generic" discussion. Keep building on what you have - a great job!

Consider a poster session where participants informally exchange information on "what works".

Looking at "Safe Community" concept for small town rural Alberta. More on the violence area - family societal - etc.

Cross the sector boundaries. Specific planning time for specific objectives.

Theme: Safety Education Through The Ages (Early Childhood - Lifelong). Marketing the Safety Message. Safety - What's It Mean to You and Me. I'd be most pleased to assist in facilitating next year's conference and/or participating as a member of a group working toward establishing a clearing house/coalition to facilitate safety education, awareness and prevention.

Examples of marketing. Some theory on role of health promotion in injury prevention. Seniors. Intentional injuries including child abuse.

Notice of the sale of conservative party memberships was inappropriate.

Data management. Include consumers real people.

Engaging community agencies. - strategies etc. Schedule presenters and expect them to stay on time. ie. Ft. McMurray - may have been handled better as a display - did not need to see all ads, a sample is good enough.

Community Development - I heard people express this need. How to take the info, digest it and start out reasonably so they don't burn out!

Invite the media. Get industry involved.

As I've said - native issues - community issues, use grass roots to help evaluate if our messages have gotten out and across to our projected audience.

Focus on workplace safety.

Motor vehicle injuries. Children - injuries - situated areas. Injuries with seniors.

Evaluation of current program - what works? How do we make it work and how to evaluate how it works.

Re Sports & Recreation Activities: Is anyone addressing the VIOLENCE related to HOCKEY - a very real issue which is being underplayed in terms of breach of rules. Lets promote fair play and get through to people like Don Cherrie.

Injuries as result of violence, again but perhaps more focused on children, elders, schools, etc.

Specific strategies for action and change in every front. Discuss concrete action methods.

The same high calibre conference using the leading issues of next year will definitely bring me back.

More on transportation and issues relating to childhood injuries.

I would like the exchange of new ideas and concepts to continue. I liked the example of a safety city or community. The only problems I had is only looking in long term for significant changes to happen. Its difficult for me to think 4 years down the line when you are on a 4 month project. I like the idea that "action" can happen without years of analysis. New ideas for action and implementation were fantastic!!! Keep it. Could "water" safety and electrical safety be added next year under "home safety" concept.

Perhaps some discussion from individuals who have had an injury of some type, focusing on their experience ie. How has their life changed, their suggestion on improvement in policy/procedure on prevention of reoccurrence. It would seem to me that 1st hand info from "survivors" may help to emphasize the issue.

Evaluation of interventions.

Violence in spectator sport should be addressed since sport stars play a major role in the lives of our youths. Hero worship is a part of the youth culture and sport stars are influential role models for the young. Unfortunately the society seems to enjoy and encourage violence in sport.

How to motivate a lethargic community.

Program evaluation strategies. Innovative/creative strategies (at the local level). Collaboration is the key - how to create coalitions/partnerships for injury prevention. Re motivational strategies for data collection - perhaps IAPC/planning committee could consider awards at local level for groups organization making significant contribution (ie. cooperation) toward data collection.

A continuation of resolutions and ideas adopted here this year, so we can see what ideas have evolved into actions.

Further expansion in the development of strategies to increase injury prevention as a community/social norm.

Successes - Collaboration with other groups. Injury prevention in context of WHO view of total health PROMOTION (includes environmental context - political, cultural, economic etc.).

Discussions specific to Safer Communities - progress reports - what worked, what didn't.

A workshop for people who deal with many of the issues and not just one area - eg. promoting injury prevention in your community.

More on safe communities - how is Alberta doing. Multidisciplinary groups - discussion around possibilities roles and process if you are just starting out.

What has been done in the past year.

More info on Safe Communities. More focus on preschoolers. More opportunity to network.

If participants were prepared to commit, we could address surviellance systems and evaluations.

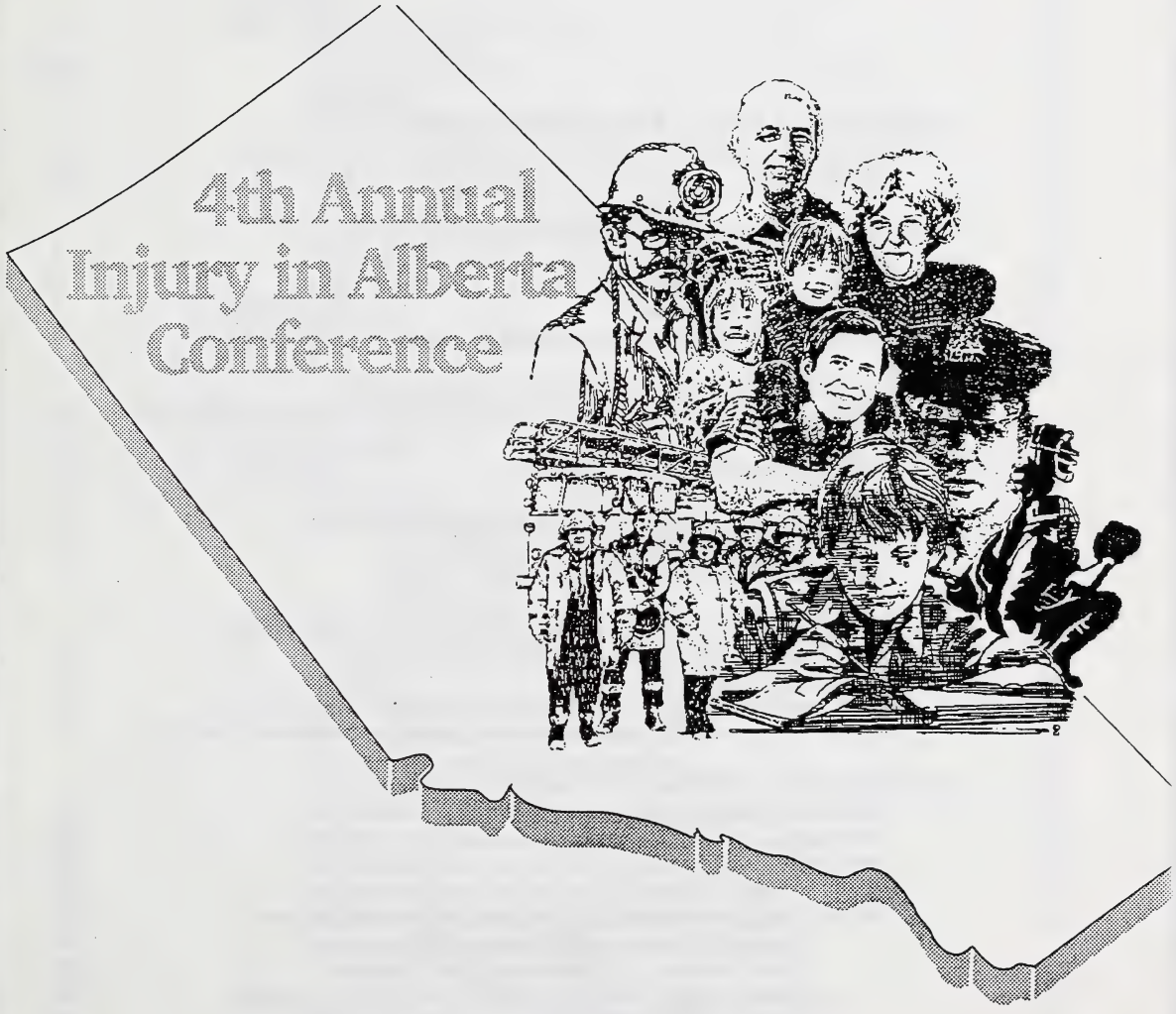
Perhaps hearing from groups who have developed injury prevention programs at a local level. What were their challenges and obstacles and how did they overcome them. Perhaps a panel from a Hospital since this is my area of focus. Overall an excellent, well-planned conference with great speakers.

Playground safety and other child safety issues. Seniors issues - injury prevention. Home/recreation safety issues and education.

APPENDIX 2

Workshop Outlines

Reference Material



October 21 - 23, 1992
Edmonton, Alberta

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4th Annual Injury in Alberta Conference
Edmonton Hilton
21-23 October 1992
Edmonton, Alberta

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From the Office of the Minister of Alberta Health (September 1992)

The Honorable Nancy J. Betkowski

SAFER CANADA INJURY RECOMMENDATIONS

The recommendations put forward in the document "A Safer Canada" are reasonable and useful from an Alberta Health perspective. Further, these recommendations support earlier work done by the department, namely the "Background Paper on Accident and Injury Prevention - 1990" and "Injury Prevention Program Options for Children and Seniors - 1991." These documents have been widely circulated and are available from the Health Promotion Branch.

Of particular importance in the recommendations from "A Safer Canada" is the emergence of a common direction and set of priorities. The challenge is to build local, provincial and national coordination and support. In Alberta there are many good things happening, but often in isolation. Building partnerships, clarifying our common agenda, and placing the community at the center of any injury prevention strategy is fundamental. Also, emphasis on creating a safe physical environment could be elaborated to include a mental health-enhancing environment.

The recommendation highlighting the importance of a surveillance system is critical if we are to ensure accessible information to individuals and communities from which they can plan to prevent injuries. It is anticipated that deliberate, self induced injuries would be included in the system. In this regard, the recommendation by the Task Force on Suicide in Canada to develop a similar system should be reviewed. Further, we must acknowledge the information currently available and then look at ways to link databases and supplement current information.

ALBERTA HEALTH INITIATIVES IN INJURY PREVENTION AN OVERVIEW

As a health department, opportunities for injury prevention spread across the full continuum of care. These have been identified below and should be read within the context of the recommendations put forward in "A Safer Canada."

Health Goals and Objectives for Alberta

In 1991, the Minister of Health established a Ministerial Advisory Committee to examine health goals and objectives for Alberta. As part of this initiative, four work groups were established to develop objectives and strategies supporting the nine health goals delineated by the Minister's Advisory Committee on Health Goals and objectives for Alberta.

Ultimately, each of the four work groups addressed a stage or phase of life - infants and children, adolescents, adults and older adults. Injury related objectives and strategies were developed for each cohort, as one component of the total health picture. As part of an expert review, these proposals were forwarded to the Injury Awareness and Prevention Centre, University of Alberta Hospitals, for comment. These comments have been received and are under review.

Interdepartmental collaboration and stakeholder consultation will continue. Alberta organizations and communities will be encouraged to use the provincial health goals and objectives to guide their local planning activities as part of the major restructuring of the health system.

Data Systems

In order to begin establishing a comprehensive injury data base, a grant from the Health Services Research and Innovation Fund has been awarded to the Injury Prevention and Awareness Centre. They will be working with injury data from a number of government departments, including Alberta Health, to identify what information is currently available and where there are gaps. The data will also be coded by health unit regions that will be useful for community planning.

The Emergency Health Services Branch, with the assistance of the Information Technology Division, has developed the Alberta Ground Ambulance Information System (AGAIN) and is in the process of developing an Air Ambulance Information and Payment System (ALAMO). These information systems, as well as a new provincial Patient Care Report (PCR) form, will collect patient, injury and other data on pre-hospital care in Alberta.

The Ambulatory Care Component of the Acute Care Funding Plan is involved with the development and implementation of emergency and outpatient clinic funding systems. These systems would also address various data collection issues.

The Health Economics and Statistics Branch prepares various status reports on an on-going basis. For example, they prepared "Accident Incidence In Alberta 1988" to supplement the national report "Accidents in Canada", and in 1991 published "Mortality in Alberta" which reviewed specific injury related categories. The branch also publishes Birth and Death Statistics By Health Units of Alberta, which provides annual mortality data on motor vehicle collisions and suicides. The branch will be developing a Statistical Compendium on Hospital Morbidity and will be accessing personal risk and accident information from the next cycle of the General Social Survey. Planning is also underway to contribute to the National Population Health Survey, a potential source of national injury information.

It is expected that coordinating the above activities will assist in eliminating data gaps and provide opportunities for linkages within Alberta Health and between the various Alberta government departments. Efforts to develop local data sets is encouraged.

Pre-Hospital Programs

Emergency Health Services Branch is responsible for pre-hospital programs in Alberta. They are currently working within Alberta Health and with other organizations to develop a planning framework and process for addressing and coordinating injury related issues. Current priorities are in the area of information systems.

Trauma Services

A Provincial Advisory Committee on Trauma Services has been established to develop and recommend operational and practice guidelines for trauma prevention, treatment and rehabilitation.

The Ambulatory Care Component of the Acute Care Funding Plan will address service issues for injured persons.

Rehabilitation Services

Currently Rehabilitation Services Branch is doing a comprehensive review of incidence, prevalence, distribution and service availability to brain injured persons and their families in Alberta.

Occupational Health and Safety

The purpose of Alberta Health's Occupational Health and Safety Program is to identify, evaluate and control health and safety hazards, to establish health and safety policies and strategies aimed at protecting and promoting worker health, and ensure the programs conform to the Occupational Health and Safety Act and Regulations. Current initiatives are in the area of first aid, emergency evacuation planning, Workers Compensation claims and follow up prevention measures, Workplace Hazardous Information Systems, office ergonomics audiometric testing and overall issues management.

Community Health Promotion

Eight health unit regions have been funded to develop community based injury prevention initiatives, through the Health Research and Innovations Fund. These initiatives include: children's injury prevention in a native community, bicycle safety, recreational injuries, transportation, and seniors falls. The intent is to demonstrate a number of strategies for injury prevention that may have applicability in other communities across the province. It is also hoped that the Injury Prevention Projects will develop a knowledge base and community infrastructure from which to plan future action.

The Health Promotion Branch is currently working with other government departments which support injury prevention, such as Transportation and Utilities, Solicitor General, Occupational Health and Safety to identify and coordinate common agendas. The Branch also participates on a number of Injury Prevention Committees with government and non government organizations to facilitate timely and coordinated action.

The Public Health Division participates on the Meeting of Health Unit Directors Injury Prevention Committee. This committee has established priorities in developing a program framework, issue identification, and resource identification for Health Units.

Environmental Health Services is looking at ways to create safe environments through the Institutions and Housing regulations.

A comprehensive survey of nurses and health care facilities has been completed to identify the knowledge base pertaining to the occurrence of needlestick injuries among nurses in Alberta. The findings of this survey suggest that a comprehensive needlestick injury prevention program would be beneficial in all Alberta health care settings. Recommendations are being developed.

From a service perspective, there are a number of contemporary initiatives Alberta's health system is providing leadership in. For example: the PARTY program, SAFE KIDS, the Grey Nuns bicycle helmet campaign, Safe and Secure preschool initiative, and the Nobody's Perfect parenting course. Many of these initiatives are well known and if additional information is required, please contact the Health Promotion Branch.

Alberta Health is involved in on-going consultations regarding the health issues of children, seniors and native people. Additional injury related projects may be identified in the course of these consultations.

Alberta
HEALTH

P.O. Box 2222, 10025 Jasper Avenue, Edmonton, Alberta, Canada T5J 2P4 403/427-6085

October 13, 1992

Ms. Kathy Belton
Injury Awareness and
Prevention Centre
3T1.20 OPR
8440 - 112 Street
University of Alberta Hospitals
Edmonton, Alberta
T6G 2B7

Dear Kathy:

RE: HEALTH GOALS AND OBJECTIVES FOR ALBERTA PROJECT

Thank you for inviting me to provide an update on progress toward establishing Health Goals and Objectives for Alberta.

The project is one of several health reform initiatives currently underway. The fiscal reality of the 1990's is challenging us to make better use of health system resources. We want to ensure that Alberta's health system is sustainable; that the system can continue to provide quality health services that meet the needs of Albertans. In order to do this, we need to find ways to use available resources more efficiently and effectively.

The Health Goals and Objectives Project will specify the vision for the health system, the goals or broad directions for change and the specific health outcomes we would like to achieve for the people of Alberta. The goals and objectives will provide a general framework for assessing priorities, guide planning and mobilize action at the community level and enable us to evaluate progress toward improving the health of Albertans.

With the assistance of the Minister's Advisory Committee on Health Goals, Alberta Health has implemented a process for establishing the vision, goals and objectives. The process involves extensive consultation with a variety of partners including communities, government departments, organizations and individuals.

Several tasks have been completed. They include:

- Developing a Health Goals Model.
- Establishing the vision and identifying nine health goals for Alberta. (The vision and goals are attached.)
- Forming multidisciplinary work groups to identify preliminary health goals for four life phases (infants and children, adolescents, adults and older adults).
- Communicating and providing opportunities for review of the goals and preliminary objectives through a stakeholder mailout; meeting with other provincial government departments; community workshops in Lethbridge, Calgary, Red Deer, and Peace River; a Provincial Conference in Edmonton and review by technical experts).

The results of the consultations to date indicate the existence of widespread support for the Health Goals Model, vision and nine health goals. However, consensus has not been achieved regarding the objectives. Stakeholders have concerns with many of the preliminary objectives, ranging from issues related to cost-effectiveness, feasibility, duplication and overlap, wording and definition to lack of a clear outcome focus.

The Minister's Advisory Committee will be meeting in November to consider how the set of objectives can be reduced and improved. The Minister's Advisory Committee will propose a revised set of objectives for public review and discussion in 1993.

In closing, I would like to mention that I will be attending the Fourth Annual Injury in Alberta Conference and would encourage participants who are interested in the project or would like further information to approach me between sessions or to contact me at 422-9510 (fax 427-2511).

Sincerely,

Judy Evans

Judy Evans,
Manager, Planning (Health Goals and Objectives Project)
Research and Planning Branch

Attachment

HEALTH GOALS

Our vision is HEALTHY ALBERTANS LIVING IN A HEALTHY ALBERTA. We see everyone working together to achieve better health for all. The health goals of Albertans are:

1. To attain the best possible physical, mental, emotional and spiritual health.

2. To develop and maintain skills for coping in a healthy way with physical and social environments.

3. To choose healthy behaviours.

4. To recognize the potentials and limitations of heredity and to minimize limitations, where practical and ethical.

5. To live in a healthy physical environment.

6. To have the opportunity to live in strong, supportive and healthy families and communities.

7. To have appropriate, accessible and affordable health services.

8. To include a health perspective in public policy.

9. To make decisions based on good information and research.

INJURIES AMONG NATIVES WORKGROUP

WORKSHOP OUTLINE

Workshop 1: Thursday, A.M.

This session will focus on providing a background and overview of the conditions of safety prevalent among native communities; information will include anecdotal and statistical data.

Workshop 2: Thursday, P.M.

A discussion circle will explore the strategies needed to meet the targeted challenges. Utilizing the principles and the matrix of Achieving Health for All, the group will prepare plans to fit the aims identified, and will review the Injury Control Objectives. The focus will be on creating safer communities.

Workshop 3: Friday, A.M.

This session is a joint workshop that will be attended by the Home and Community Workgroup and representatives from the Injury Among Natives Workgroup. It will focus on poison prevention and effective intervention in poisoning situations. Mr. Rick Kaczowka, of the Alberta Poison Center, will review the interventional programs offered by the poison center. The discussion will address prevention techniques, education strategies, recognition of drug overdose symptoms and correct first-aid choices.

With the participation of the workshop members, the issues of poisonings and burns will be explored and community-specific interventions and action plans will be developed.

Native Injuries

Why do we have three times the number of injuries among natives than among the rest of the population ?

If injuries can be classified as a disease, in Canada we have an epidemic among our native population. According to the *Background Paper on Accident and Injury Prevention in Alberta*, prepared for Alberta Health in September 1990, native Canadians are three times more likely to be injured than other Canadians. "As well, the rate of hospital admissions resulting from accidents(sic) and violence was four times greater for natives than for all Canadians," states the paper. In the United States, the native injury mortality rate is nearly double that of the rest of the American population.

Not to overstate the obvious, statistics like these make one ask, "What is being done or what is not being done?" In upcoming issues you will read articles discussing the problem and what kind of programs are available to deal with this epidemic.

The Alberta situation

In Alberta the leading causes of injuries among natives are:

1. Motor Vehicle Collisions
2. Suicide
3. Homicide/Assault
4. Poisoning
5. Drowning

According to information supplied by Alberta Medical Services Branch, in 1989 over one-third (37%) of native deaths were a result of motor vehicle collisions and 21% were due to suicides. Next was homicide/assault and poisoning, which were both 8%.

If one compares the top five native mortality rates against that of the total Alberta population, there is a definite pattern. This should mean that the existing programs and strategies used to reduce injuries among Albertans should work for natives too. In actual fact, the rates for natives still remain three to four times higher than the rest of the population.

While concluding that native injuries are not being reduced using existing procedures may seem rather simplistic, it points out the fact that this problem is far bigger than the tools we are using to fight it.

The threat to native children

From Alberta Health's background paper: "The threat to native children is apparent. Compared to the national average, registered native children have four times the risk of fatal injury." In *The Health of Canada's Children: A CICH Profile* (Canadian Institute for Child Health), the suicide rate (per 100 000) for native Canadians was compared to that of the total population. The rate for

Mortality Rates[1]
By Major Causes of Injuries
Ages 1-14
Canada and Indian Reserves 1977-82[2]

	All Reserves	All Canada (Rate/100 000)
All Injuries	66.5	20.5
MV and Traffic Injuries	14.0	8.8
Inadvertent Falls	1.0	0.4
Fires and Flames	15.2	2.5
Drownings	13.5	3.0

[1] Age Standardized
[2] Average

from The Health of Canada's Children: A CICH Profile

10- to 14-year-old natives was 7.4, but the rate for the total population of 10- to 14-year-olds was only 1.5; the native rate is almost five times higher.

The leading cause of death for children in Canada is injuries, and in Alberta the native population has a high proportion of young children. In fact, in 1981 42% of natives were under the age of 15, compared to only 24% of the total population in the province.

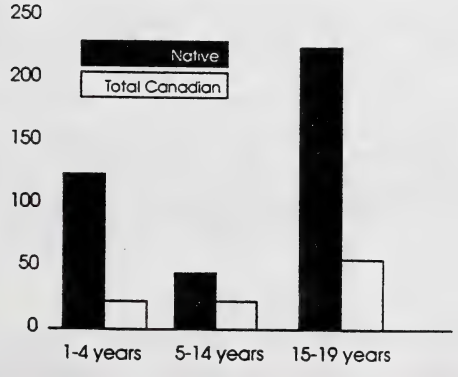
Contributing factors

Alberta Health's background paper states best what seem to be the factors involved in the high native death rate:

"Many natives live in isolated areas where roads are poor, buildings are not safely constructed, firefighting equipment is inadequate, or natural water and animal hazards abound. In Alberta in 1981, natives made up 14.2% of the population of Census Division No. 12 and 12.7% of Census Division No. 15, which together comprised the northern half of the province. This area has had high rates of both injury mortality and injury morbidity. It would not be unreasonable, then, to look for some correlation between these factors.

Both urban and rural natives are clustered at the low end of the socioeconomic scale, which has been marked by high injury rates. The family stresses common in such circumstances must certainly affect young natives, as 'non-intentional injuries (such as falls and burns) increase among children when major intrafamily problems exist.' Limited access to safe, suitable recreation areas is another problem confronting low-income families and communities.

Comparison of Death Rates Due to Injuries By Age Registered Native (1984) and Total Canadian Population (1985)



from The Health of Canada's Children: A CICH Profile

What to do?

To address this preventable health problem satisfactorily, a number of different intervention strategies will have to be employed, aimed at resolving the economic, cultural, political and historical factors that have shaped native society.<>

Ian Jackson

Native Injury Abstracts

Burn Injuries in Native Canadians: A 10-year Experience

P.R. Callegari, J.D. Alton, H.A. Shankowsky, M.G. Grace

Between 1977 and 1986, 1598 patients were admitted to the Firefighters' Burn Unit of the University of Alberta Hospitals in Edmonton, Alberta. One hundred and twenty-five (7.8%) of these patients were Treaty Indians or Metis, compared to 4.2% of the general population in the given area. The data show native people suffered larger total body surface area (TBSA) burns, were hospitalized on average 16.9 days longer and required 0.7 more operations than their non-native counterparts. Natives are also three times more likely to remain within the health care system as in patients for rehabilitation after acute burn management has been completed. Mortality rates as a result of these burns were similar for natives (4.8%) and non-natives (4.3%). This review indicates that the native population is at higher risk of suffering burn injury even after adjusting for certain demographic variables, consequently impacting the utilization of the health care system.<>

Burns, Including Thermal Injury, 1989 Feb;15(1):15-19

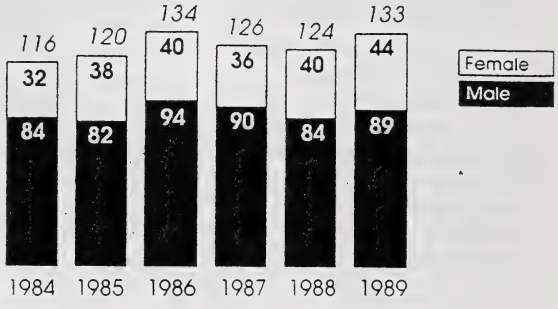
Death Styles Among Canada's Indians

G.K. Jarvis and M. Boldt

Data was examined from a prospective study of native mortality on 35 reserves and colonies in the province of Alberta. Native Indian deaths tend to occur at a younger age than others, to be multiple events, and to occur in non-hospital settings with others present. In almost half the cases, death resulted from accident, suicide or homicide. Though circumstances of weather carelessness resulted in some deaths, the majority of violent deaths were associated with a heavy use of alcohol.<>

Social Science Medicine, 1982; 16(14):1345-52

Alberta Registered Indian Deaths Due to Inadvertent Injuries, Violence & Poisoning — 1984-1989



Age-Specific Suicide Rates
Registered Native and Total Canadian Population
(Rate/100 000)

Age Group	Registered Native[1]	Total Canadian[2]
0-9	0.0	0.0
10-14	7.4	1.5
15-19	81.6	12.3
20-24	93.8	18.8
25-29	80.6	17.3
30-34	55.4	17.4
Total: 0-85 yrs	43.5	13.7

[1] Average 1980-84
[2] 1984

from The Health of Canada's Children: A CICH Profile

INJURIES AMONG NATIVES WORKGROUP

CHILDHOOD INJURY PREVENTION: CPS MEETING, Sept. '92

1. **Childhood injury prevention will be best accomplished as a partnership between First Nations and Inuit communities and health care workers.**

Partnership is a word that is in increasing usage and, as such, in danger of losing its usefulness. However, it is still the best we have to describe the relationship that many would like to achieve between First Nations and Inuit communities and health care workers wherever they are from. I stress that it is an evolving relationship, and one that, if we sincerely are committed to it, poses several challenges to both partners.

The first is that, while mutual respect and trust are fundamental to an effective partnership, it will take time for these essential characteristics to be earned.

A second is that the community's agenda must have primacy. While at first hearing this statement appears to unbalance the partnership, in fact it serves instead to remind the health care workers, both those from within and those from outside the community, of the overriding goal of promoting healthful childhood. For their part, health care workers do have the responsibility to share their particular perspective, and thereby influence the final agenda towards which interventions may then be directed and evaluated.

2. **The information base must be relevant to community priorities and action oriented.**

Here are the data describing the mortality from injuries experienced by First Nations children. Unfortunately, British Columbia and the Northwest Territories are excluded because vital statistics for Status Indians and Inuit residents of these regions have not been available to MSB since the mid-80's.

Another problem with the coverage is that, of the remaining provinces and territory, only Manitoba, Saskatchewan, Alberta and the Yukon report on all Status Indians within their boundaries, regardless of residence on or off reserve. The Atlantic provinces and Ontario collect data only for those persons living on reserves. Quebec similarly only includes on-reserve individuals and has the further exclusions of those communities covered by the James Bay and Northern Quebec Agreement as well as some others not directly served by MSB. (Bobet)

OH # 2

The first overhead, which covers only the most recently reported year's data, 1990, serves to remind us that injuries cause most

childhood deaths -- more than 70% for boys in every age group past the first year, and for girls after age 4.

OH # 3

The fatal injury rate varies considerably across the country, with a more or less east to west gradient.

OH # 4

The relative importance of the mechanism of injury also varies between Regions. Most noticeable is that the 'other' category, is first in all regions except Alberta, and is especially high in Ontario. I think that this is first and foremost an artifact of the groupings used for the data, since the homicides and many of the suicides are included there. For the two years that I have information about suicides '89 and '90, the 'other' category drops nationally to 18% of injuries from 36% and even further to 10% if homicides are taken out. However, for all Ontario residents, the suicide rate in recent years has been lower than the national average, so unless the reverse is true for Status Indian children living on-reserves, this anomaly remains without ready explanation.

Motor vehicle crashes clearly require attention, especially in Alberta. Fires account for nearly 20% of the injury deaths in Manitoba, followed closely by drownings.

OH # 5

The mechanism of injury of course also varies with the age of the child. Again, the other category is predominantly suicide and homicide, and increases dramatically in the teen years as does motor vehicle crashes. Fire deaths and drowning victimize primarily the pre-schoolers.

However, mortality is but the tip of the injury iceberg. In Canada, for all Canadians, there are 20 hospital admissions for every injury fatality, and many more outpatient or physician visits.

At the symposium held last year in Edmonton to develop National injury prevention objectives, there was not general support for specifying Inuit or Indian status in surveillance systems. This attitude handcuffs specific analysis of the injury problem among this group and perpetuates speculative rather than well informed planning. As a group, the CPS can join with National and local Native Organizations in calling for more appropriate recognition of First Nations and Inuit people in the design of surveillance activities.

In order for the information to be helpful on a local basis, it

must be the kind of information the communities wish to have, and it must be in their hands. This presents a challenge for health care workers, particularly those from outside, because it means that careful discussion must occur with the community partners to clarify what community activity or change or health outcome is desired, how information about it can be collected and by whom, where and how the analysis will be done, and how the feedback will reach the community. The discussion must also include how information such as that derived from vital statistics, provincial health services utilization records and other surveillance activities such as CHIRPP can be integrated with the locally derived information. A supplement to the CJPH referenced in the handout is a good starting point for those of you who are interested in learning more about this desireable shift in research methodology.

3. <u>Unintentional and intentional injuries must both be included in a comprehensive approach.</u>

OH # 6

I made mention earlier of the large number of suicides reported. I was surprised as I was preparing this talk just how high the proportion was, especially since it is generally conceded that suicides are underreported. Add to this total the 16 reported homicides in the same two year period, and one is given an awful glimpse of the intra- and inter-personal violence victimizing aboriginal children and youth.

There is a wide and persistent chasm between health professionals who deal with mental health and those who focus more specifically on physical health or illness. This separation has occurred in part because of different conceptualization of health and the causation of illness, and is perpetuated by the general lack of communication between the various health professionals. Community members, unless they have been strongly influenced by the perspectives of the various health professionals available to them, tend not to make the separation and intuitively both define the problems and seek solutions in more comprehensive or holistic terms.

Another factor contributing to the separation is the apparent lack of evidence for effective community interventions directed against intentional injury. I commend to you Dr. Stanwick's excellent review referenced in the handout. However, this situation must not be a deterrent to action. Instead conscious effort must be made to continually evaluate initiatives undertaken, and again I suggest that the development of research methods that are participatory, action oriented and community centred, must be encouraged.

To return to the matter of the blinkered perceptions of the various

health professionals, one result is that the importance of intentional injury is either underestimated, or obscured all together. The type of data categorization used in reports of vital statistics is one example that we have just seen.

It also means that opportunities for collaboration may be missed. A legitimate criticism levelled against the Brighter Futures Initiative by First Nations and Inuit leaders is that it is too compartmentalized, there being separation of Mental Health and Injury Prevention components for example. While this may have been necessary during the process of obtaining Treasury Board funding, the challenge now is to fit the pieces together so that a comprehensive effort is brought to bear against the conditions that place children at risk and result more broadly in the disabilities discussed by Cathy, and more particularly in injuries.

Richard Musto
Regional Community Medicine Consultant
Alberta Region, MSB, HWC

INJURIES AMONG NATIVES WORKGROUP

Additional Reading

Prevention of Injuries among Canadian Aboriginal People. Final Report of the Interdisciplinary Working Group on Injury Prevention. MSB, 1991.

Suicides, Violent and Accidental Deaths among Treaty Indians in Saskatchewan: Analysis and Recommendations for Change. Health and Social Development Commission, Federation of Saskatchewan Indian Nations.

Aboriginal Suicide in British Columbia. Prepared by Mary Cooper, Anne Marie Karlberg, and Loretta Pelletier Adams for the B.C. Institute on Family Violence Society. Burnaby, B.C., 1991.

Health Promotion Research Methods: Expanding the Repertoire. Supplement to the Canadian Journal of Public Health, vol. 83, 1992.

Stanwick, R.J. Prevention of Injuries in Canadian Children Aged 0-14 Years. Health Services and Promotion Branch, HWC, 1988.

Overhead #1

Childhood Injury Prevention

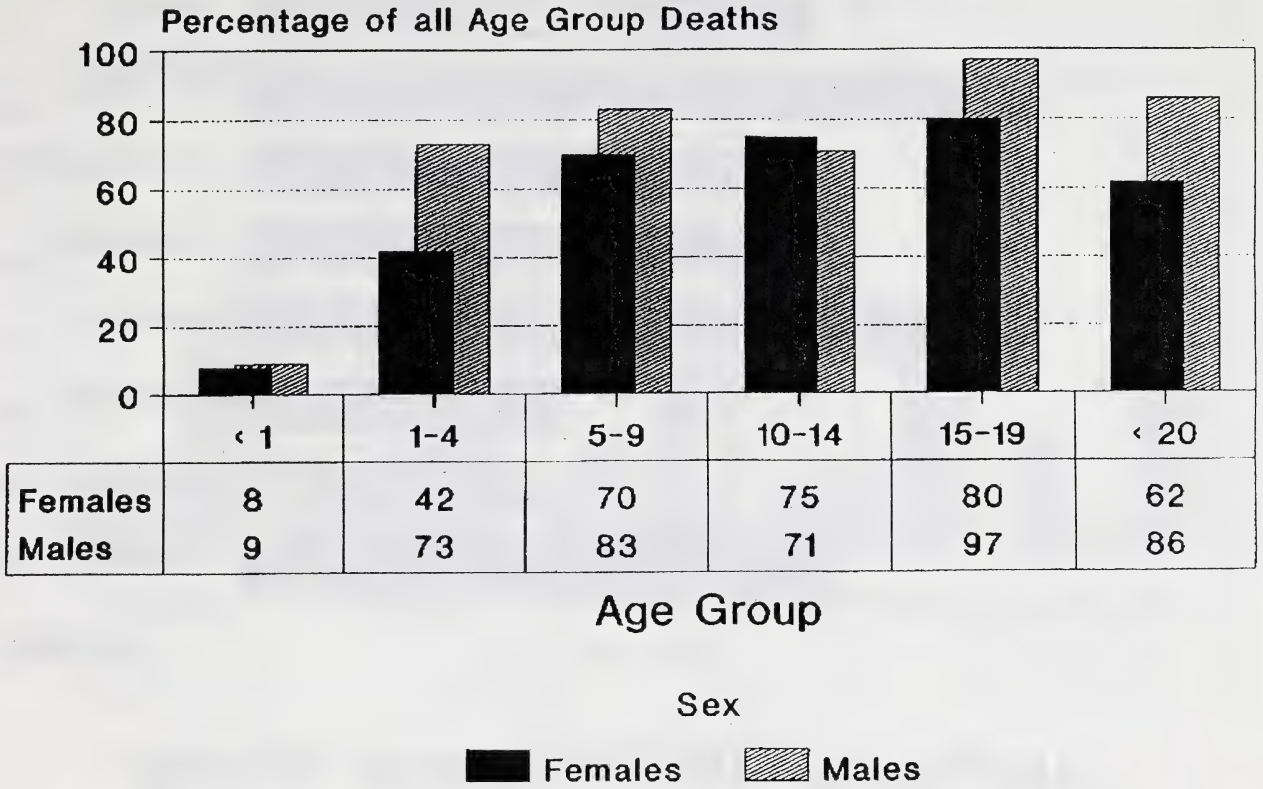
Childhood injury prevention will be best accomplished as a partnership between First Nations and Inuit communities and health care workers.

The information base must be relevant to community priorities and action oriented.

Unintentional and intentional injuries must both be included in a comprehensive approach.

Musto, CPS 92-1

Childhood Injury Mortality, 1990
Percentage of all Age Group Deaths

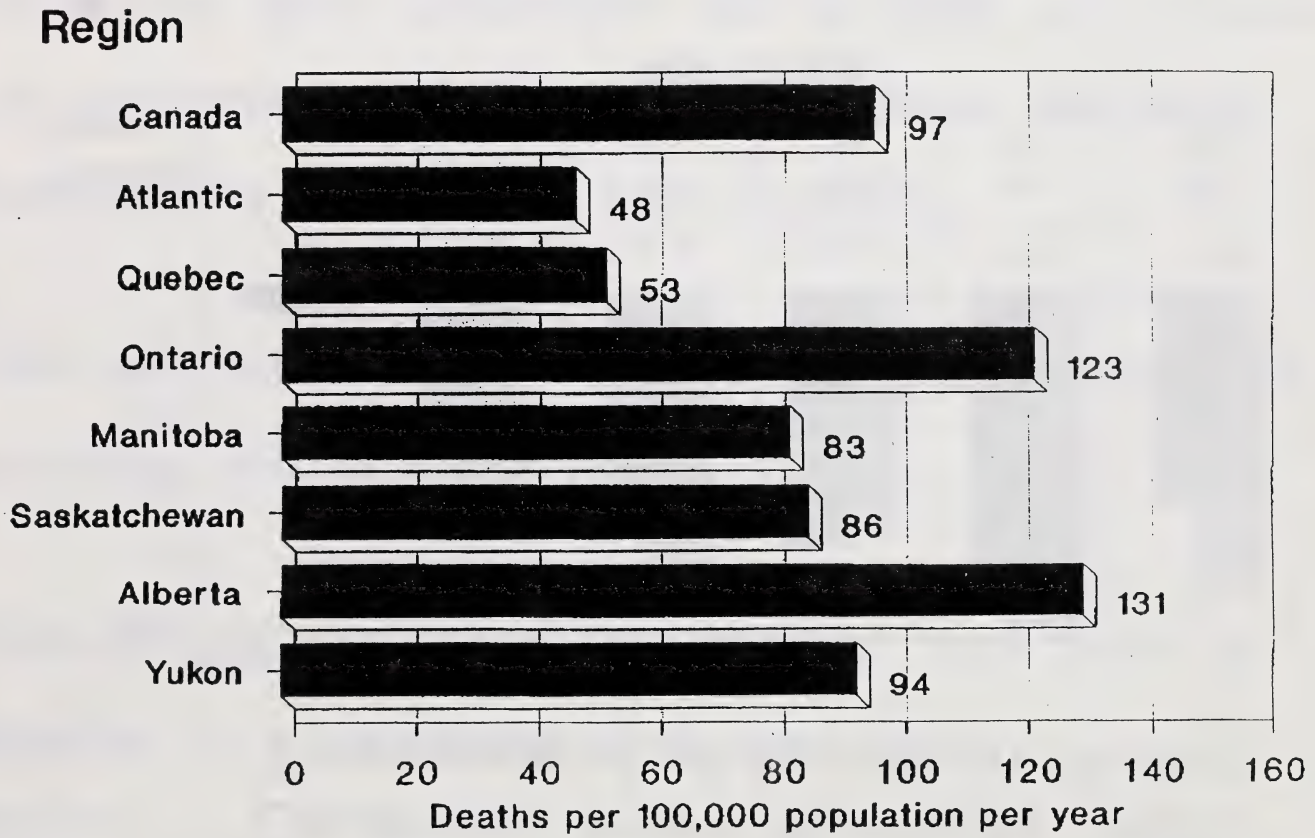


	< 1	1-4	5-9	10-14	15-19	< 20
Females	8	42	70	75	80	62
Males	9	73	83	71	97	86

Musto, CPS 92-2

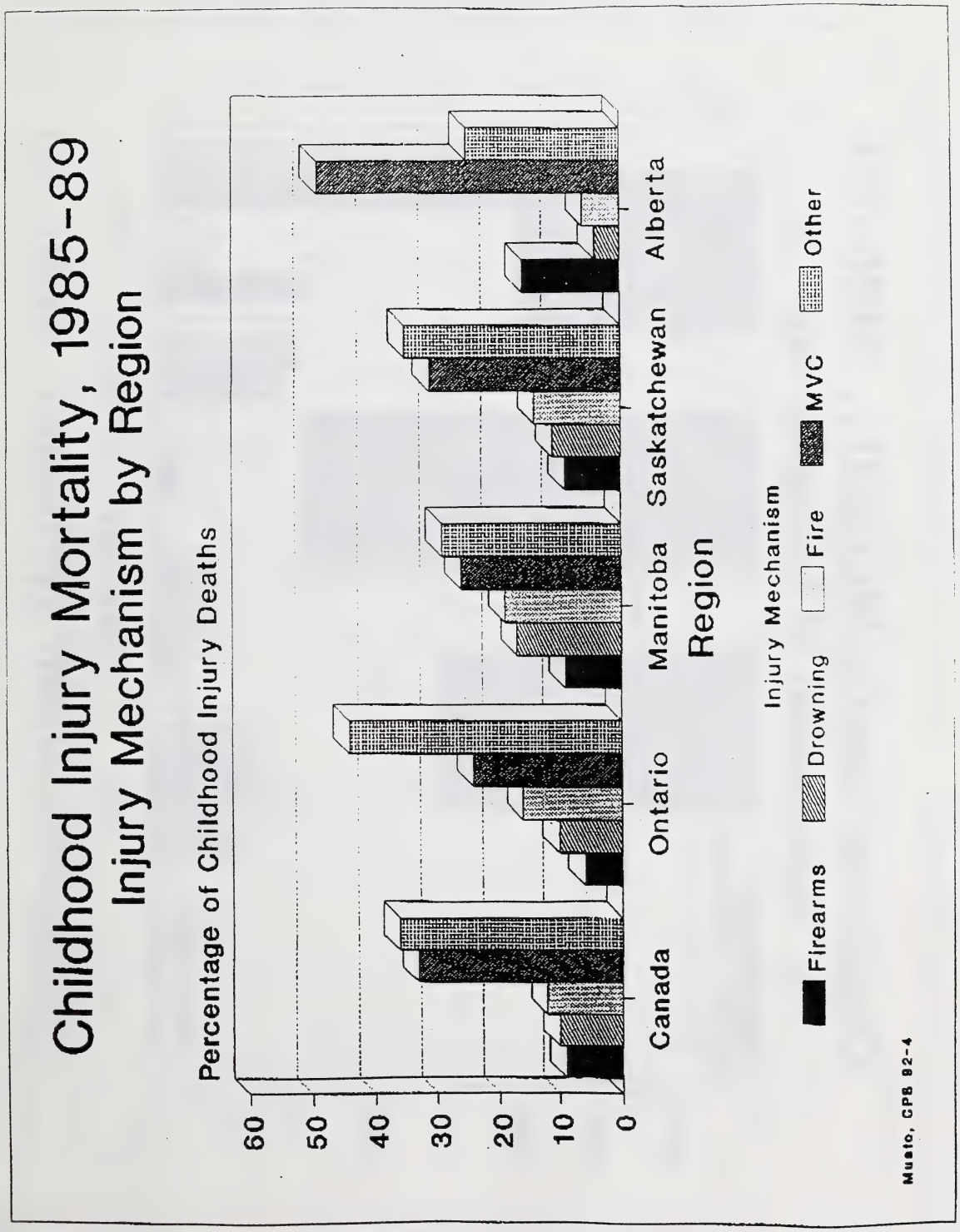
Overhead #2

Childhood Injury Mortality, 1985-89
Average Annual Mortality by Region

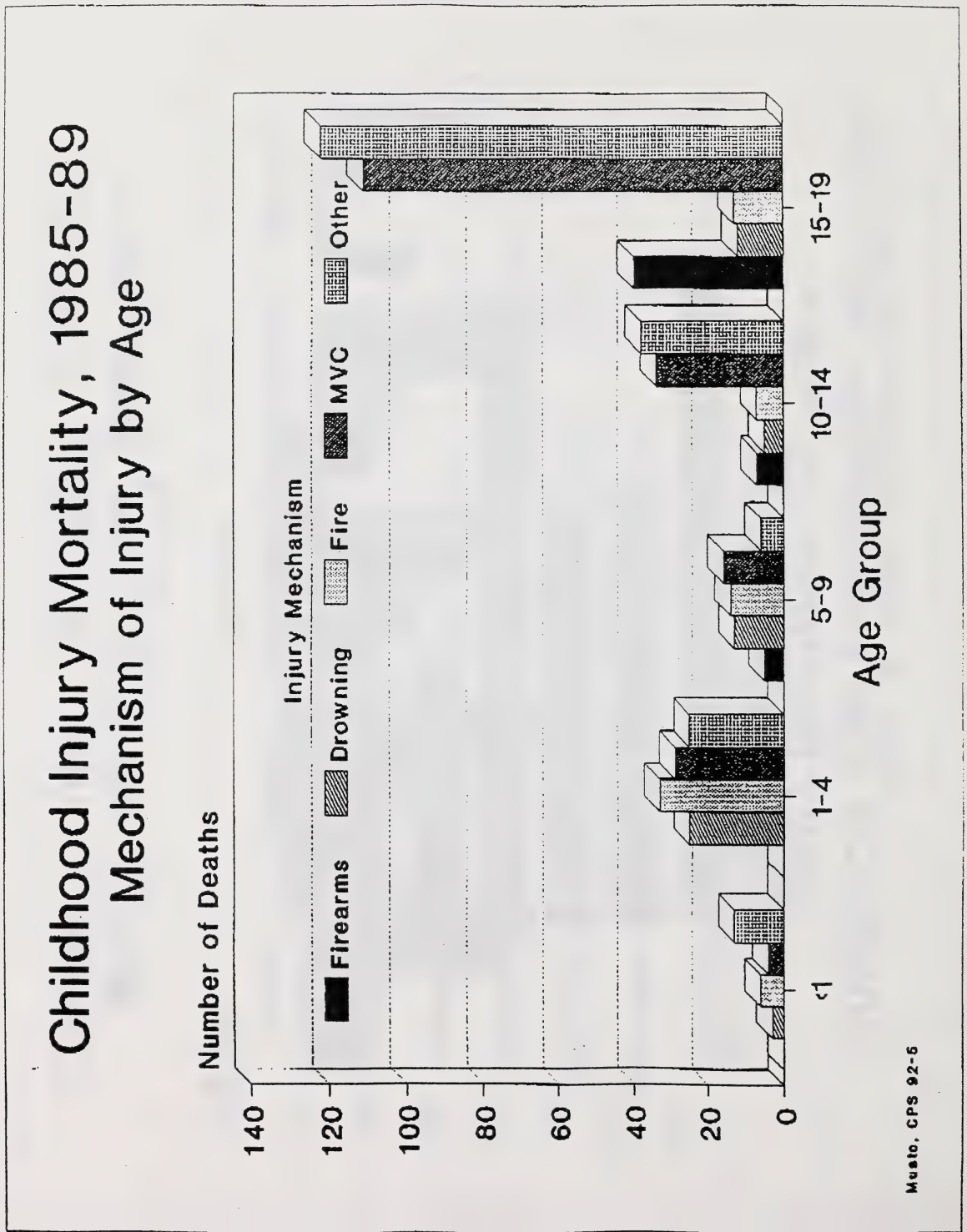


Musto, CPS 92-3

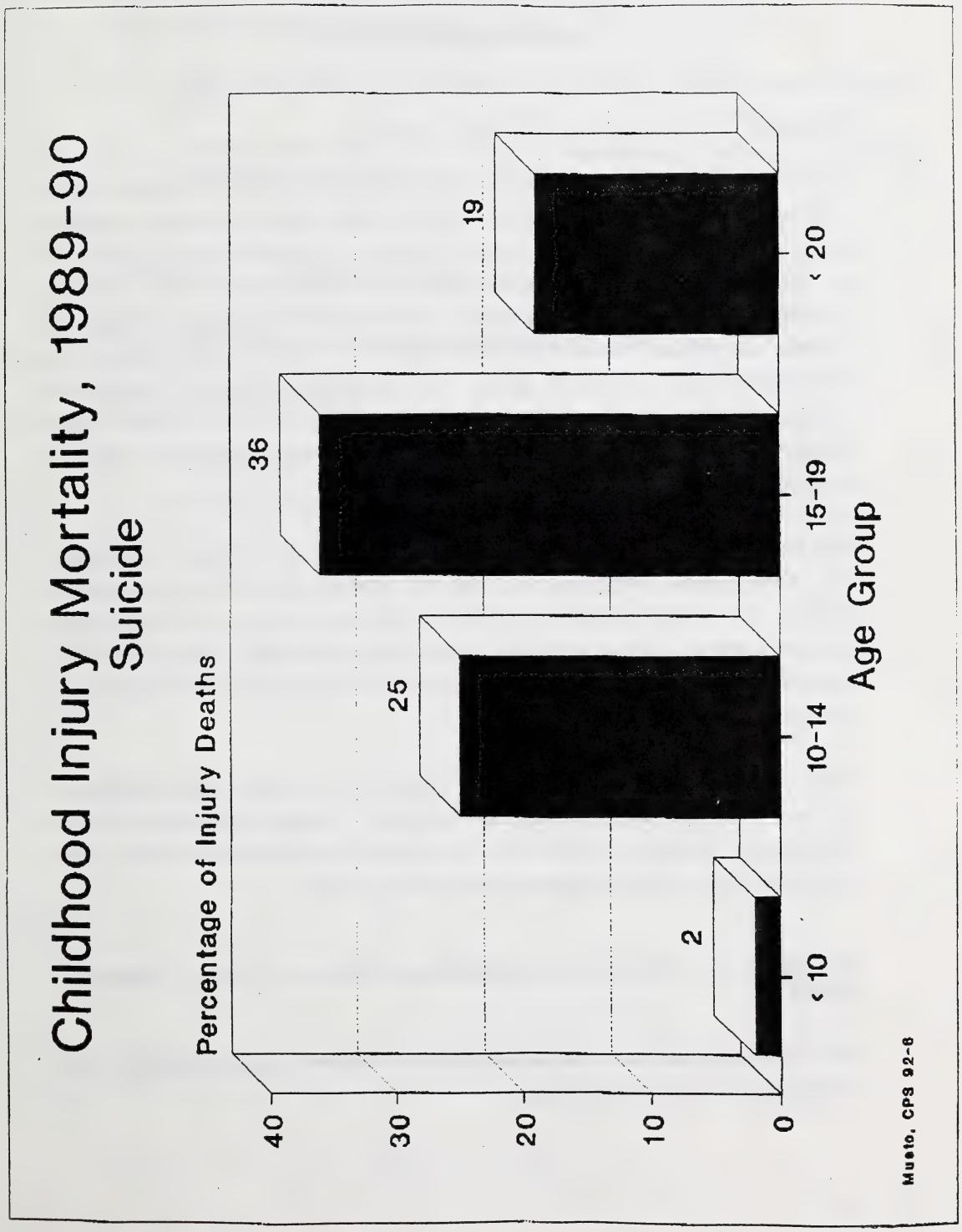
Overhead #4


Childhood Injury Mortality, 1985-89
Injury Mechanism by Region
Percentage of Childhood Injury Deaths
60
50
40
30
20
10
0
Canada
Ontario
Manitoba
Saskatchewan
Alberta
Region
Injury Mechanism
Firearms
Drowning
Fire
MVC
Other
Mustc, CPS 92-4

Overhead #5


Childhood Injury Mortality, 1985-89
Mechanism of Injury by Age
Number of Deaths
0
20
40
60
80
100
120
140
Injury Mechanism
Firearms
Drowning
Fire
MVC
Other
<1
1-4
5-9
10-14
15-19
Age Group
Musto, CPS 92-6

Overhead #6


Childhood Injury Mortality, 1989-90
Suicide
Percentage of Injury Deaths
40
30
20
10
0
2
25
36
19
< 10
10-14
15-19
< 20
Age Group
Musto, CPS 92-8

INJURIES AS A RESULT OF VIOLENCE WORKGROUP

WORKSHOP OUTLINE

Workshop 1: Violence is a Universal Concern

The visibility of violence in communities around the world has, in the last decade, become a universal concern. Rates and patterns of known violence both have shown significant change. The world-wide incidence of reported assaults skyrocketed form a little over 150 per 100,000 population in 1970 to nearly 400 per 100,000 population in 1990. The rates of intentional homicides have also shown an almost threefold increase. Gang-based violence and political terrorism are both apparently on the rise. Knowledge of the widespread violence in families has grown. Violence perpetrated by people in positions of authority and trust has also surfaced as a significant problem. Policy makers, social reformers and the general public are increasingly aware of the devastating social and economic costs of violence.

This workshop will elaborate on existing knowledge concerning violence internationally and within Canada. Participants will not only examine rates, types and patterns of violence, but will explore myths and beliefs we hold about violence and how these myths match with reality. Questions including: Who is at the greatest risk? Where are we most vulnerable? will be discussed in an attempt to provide a comprehensive knowledge base for prevention efforts.

Finally, the workshop will explore briefly a range of approaches to the prevention of violence being used internationally and nationally. Workshop participants will be encouraged to discuss the implications of insights and initiatives around violence shared during this session, for creating safer communities in Canada.

Workshop 2: Methods for Preventing Violence to Foster Community Health

This workshop is designed to assist participants to examine methods utilized in current programming to prevent family violence.

INJURIES AS A RESULT OF VIOLENCE WORKGROUP

To meet this aim participants will work together to:

1. Relate beliefs about the underlying root causes of violence to current program efforts.

2. Analyze current approaches taken in programming in relation to expected community health outcomes.

Workshop 3: Prevention of Violence in Alberta

This workshop focuses on the prevention of violence in Alberta.

Participants will be invited to:

1. develop a vision for a community based approach to eliminating violence.

2. develop a statement of strategies to achieve a safer environment for Albertans.

INJURIES AS A RESULT OF VIOLENCE WORKGROUP

REPORT OF THE VIOLENT AND ABUSIVE BEHAVIOUR WORK GROUP

1. Introduction

The Violent and Abusive Behaviour work group, consisting of a small number of individuals who represented a broad range of professional backgrounds and interests, addressed the problem of injury resulting from violent and abusive behaviour. Such behaviour includes, but is not limited to, intra-familial and extra-familial violence, such as homicide, sexual assault, child abuse and neglect, elder abuse and neglect, spousal assault, suicide and self-injury.

Violent and abusive behaviour is a major cause of injury and death. In addition to the physical injury, it almost always results in, or is accompanied by, psychological trauma, which may be severe and long-lasting. It is likely that all injury, regardless of etiology, results in psychological trauma to some degree, but in situations where the injury is intentional we would expect significant and profound psychological trauma to occur.

2. Issues Related to Setting Objectives

The work group discussed the notion of setting quantifiable objectives for the reduction of injury resulting from violent and abusive behaviour. It was acknowledged that there are several significant problems associated with such an undertaking. Indeed, it may not be possible nor appropriate to set quantifiable objectives. First, there is a paucity of research related to the nature and incidence of violent and abusive behaviour and its associated health problems. Further, there is widespread concern that current information regarding the incidence of intentional injury and/or violent behaviour may lack reliability and validity. The problem of family violence, in particular, is subject to under-reporting both by victims and service providers. Related to the problem of under-reporting is the concern that any progress in attempts to eliminate the problem of family violence would initially be reflected in higher reporting rates as victims become more likely to seek assistance. The problems associated with the reliability and validity of the information available are further compounded by the fact that there is no common definition(s) nor reporting structure for violent and abusive behaviour. Finally, the setting of quantifiable objectives is a strategy that has not been used in developing prevention and intervention programs related to violent and abusive behaviour and there is minimal evidence of its efficacy to support its use.

Notwithstanding the identified problems associated with setting quantifiable objectives, the violent and abusive behaviour work group recognized that there is considerable merit in defining objectives that could be used to monitor the incidence of intentional injury and gaining a better understanding of the magnitude of the problem. However, the setting of target objectives was thought to be inappropriate. That is, identifying a desirable rate of reduction in any one behaviour was thought to implicitly suggest that there was an acceptable level of violent and abusive behaviour. Such a position would directly contradict the working group's conclusion that societal attitudes that tolerate or sanction violence and abuse contribute to the persistence of such behaviour. Thus, the working group agreed to set objectives *to indicate the desirability of a continuous downward trend in the incidence of injury and death resulting from violent and abusive behaviour*. It is hoped that this

approach implicitly suggests that the ultimate goal is the elimination of violent and abusive behaviour in our communities and homes. Several issues were addressed by the working group. The group also contemplated that it is possibly more appropriate and productive to set "service objectives" (e.g., treatment and prevention services) rather than "health status objectives" (e.g., outcome-focused) in this area of concern. However, it was recognized that this would necessitate a long-term activity that should involve broader consultation than is possible within the working group.

3. Issues for Active Consideration

Violent and abusive behaviour has emerged as a social or criminal justice issue. Health professionals, for the most part, have only recently acknowledged the role that they can play and that this must extend beyond the traditional health care approach. Further, the approach of health professionals has been mostly concentrated at a tertiary level of intervention, involving late identification and rehabilitative aspects of care, with little involvement in primary prevention activities. The importance of primary prevention during the interaction of health professionals with their clients was well-recognized by the working group, who consistently noted the need for attitudinal change.

4. Injury Control Objectives — Violent and Abusive Behaviour

What follows are the objectives (without targets) set by the Violent and Abusive Behaviour work group. It should be noted that the baseline rates were obtained from data sources that have considerable limitations, not the least of which is the problem of comparability across the range of violent and abusive behaviour. Caution is advised when considering these rates; they have only been provided as an estimate of the magnitude of the problem of violent and abusive behaviour in Canada today.

INJURIES AS A RESULT OF VIOLENCE WORKGROUP

VIOLENT AND ABUSIVE BEHAVIOUR OBJECTIVES

OBJECTIVES	BASELINE PER 100 000 IN CANADA	% CHANGE OVER PAST 4 YEARS	TARGET % REDUCTION	DATA SOURCES	MONITORING AGENCIES
1.0 Reduce homicides	1.71[1,2] (1988)	-20.47		Mortality Database	Statistics Canada, CCHI
2.0 Reduce assaults	45.42[3] (1987) 68[4]	-2.43		Hospital Morbidity Database Canadian Urban Victimization Study (CUVS) General Social Survey	Canadian Centre on Justice Statistics (CCJS) CCHI
3.0 Reduce the incidence of injury resulting from child abuse and neglect	Unavailable			Hospital Morbidity Database Victimization surveys of adults	CCHI
4.0 Reduce the incidence of injury resulting from inter-spousal violence	10.3	-14.4[5,6]		Victim surveys Police records	CCJS
5.0 Reduce suicides	12.03[1] (1988)	-2.83		Mortality Database	CCHI
6.0 Reduce the incidence of self-inflicted injuries resulting in hospitalization	73.43[3] (1987)	+11.77		Hospital Morbidity Database	CCHI
7.0 Reduce the incidence of injuries resulting from elder abuse and neglect	Unavailable			Hospital Morbidity Database	CCHI
8.0 Reduce the incidence of sexual assault of adults	Unavailable			Police records Surveys	CCJS

INJURIES AS A RESULT OF VIOLENCE WORKGROUP

Baseline Data References:

1. Canadian Mortality Database. Personal Communication. Laboratory Centre for Disease Control, Health and Welfare Canada.

2. The largest proportion of homicides take place in the victim's home, with one-half of all victims killed in their own residence. The proportion of victims killed in their own residence was considerably higher for women than for men (63.8% vs 42.4%). 78.7% of solved homicides in 1988 involved suspects and victims who were known to each other. Overall, 36.1% of offenders and victims were domestically related, 42.6% were acquainted through business or social situations, while another 21.3% were total strangers. In 1988, 57.4% of all female victims of homicide were killed by someone with whom they shared a domestic relationship, whereas only 24.4% of male victims were killed in such a situation.

   The most common methods of committing homicide in 1988 were shooting (29.4%) and stabbing (28.7%), followed by beating (21.2%). Together, these three methods accounted for four out of every five homicides committed.

   Although likely an under-representation, police report that nearly one-third of solved homicide incidents involved alcohol or drug consumption by either the victim or suspect. [From: Statistics Canada, Canadian Centre for Justice Statistics, Law Enforcement Program (1989). *Homicide in Canada 1988: A Statistical Perspective* (Catalogue 85-209). Ottawa, Ontario: Minister of Supply and Services.]

3. Canadian Hospital Morbidity Database. Personal Communication. Laboratory Centre for Disease Control, Health and Welfare Canada.

4. Sacco, V.F. and H. Johnson. *Patterns of Criminal Victimization in Canada*. General Social Survey Analysis Series (Catalogue 11-612E, No. 2), Ottawa, Ontario: Statistics Canada. Housing, Family and Social Statistics Division/Minister of Supply and Services Canada, 1990.

5. Brinkerhoff, M.B. and E. Lupri. "Interspousal Violence". *Canadian Journal of Sociology*, 13, 1988:407-434

6. Kennedy, L.W. and D.G. Duton. "The Incidence of Wife Assault in Alberta". *Canadian Journal of Behavioural Science*, 21(1), 1989:40-54.

7. Ratner, P.A. *The Health Problems and Health Care Utilization Patterns of Wives Who Are Physically and/or Psychologically Abused*. Unpublished master's thesis, University of Alberta, Edmonton, 1991.

8. Smith, M.D. "The Incidence and Prevalence of Woman Abuse in Toronto". *Violence and Victims*, 2, 1987:173-187

INJURIES IN THE HOME AND COMMUNITY WORKGROUP

WORKSHOP OUTLINE

Workshop 1

DATE: Thursday, 22nd of October 1992

TIME: 9:45 a.m. - 12 noon

The keynote speaker will be Philip Schaenman of TriData Incorporated, who will discuss fire and burn prevention from an international perspective.

The United States and Canada have had the highest fire death rates in the world for most of the last two decades. People of Hungarian, Native American, Irish and Scottish descent living in Canada and the U.S. account the highest fire death rates in these two countries. The cultures these people come from have many things in common that contribute to high fire incidence and death rates. On the other hand, people of Dutch, Austrian, German, Japanese, and Korean descent have much in common that contribute to their low fire death rates.

TriData's research has focused on why Canada and the U.S. have been less successful than other nations in public fire awareness and education. The company has also explored the question of how to overcome the barriers to public fire education, identified key factors leading to successful fire safety programs and analyzed methods which demonstrate the effectiveness of these programs. The company's latest research concentrates on the hardest-to-reach groups which account for a disproportionately large part of the fire and burn problem. This research will be summarized.

Two local information sessions will precede Mr. Schaenman's presentation. The format for the workshop is as follows:

INJURIES IN THE HOME AND COMMUNITY WORKGROUP

0945 - 1005	A Review of Alberta Fire Statistics
Presenter	Fire Commissioner Tom Makey Fire Commissioner's Office, Alberta Labour
1005 - 1025	Profile of Pediatric Burns in the Firefighters Burn Unit, Edmonton, Alberta
Presenter	Dr. Tony Ryan Royal Alexandra Hospitals, Edmonton, Alberta
1025 - 1040	Break
1040 - 1130	International Perspective to Fire and Burn Prevention
Presenter	Mr. Philip Schaenman, Arlington, Virginia
1130 - 1200	Question Time

Workshop 2

DATE: Thursday, 22nd of October 1992

TIME: 2:45 p.m. - 4:30 p.m.

This workshop will begin with a panel session and will explore the personal and organizational goals of individuals from various fire and burn prevention backgrounds. Efforts will be made to identify where individuals and organizations can compliment and support each other in preventing burn injuries.

1. Mr. Philip Schaenman, TriData Corporation, Arlington, Virginia
2. Captain Tim Vanderbrink, Edmonton Fire Department, Edmonton, Alberta
3. Mr. Peter Clarke, Burn survivor, Edmonton, Alberta
4. Ms. Audrey Groeneveld, Clinical Nurse Specialist, Firefighters' Burn Treatment Unit, Edmonton, Alberta

The following issues will be discussed with the panel:

1. What do you see as your role in fire and burn prevention at the present time?
2. Where do you think we should go from here?
3. How do we get there?

INJURIES IN THE HOME AND COMMUNITY WORKGROUP

Workshop 3

DATE: Friday, 23rd of October 1992

TIME: 9:15 a.m. - 11:15 a.m.

This session is a joint workshop that will be attended by the Home and Community Workgroup and representatives from the Injury Among Natives Workgroup. It will focus on poison prevention and effective intervention in poisoning situations. Mr. Rick Kaczowka, of the Alberta Poison Centre, will review the interventional programs offered by the poison center. The discussion will address prevention techniques, education strategies, recognition of drug overdose symptoms and correct first-aid choices.

With the participation of the workshop members, the issues of poisonings and burns will be explored and community-specific interventions and action plans will be developed.

INJURIES IN THE HOME AND COMMUNITY WORKGROUP

FIRE LOSSES IN ALBERTA

Annual fire losses in Alberta have averaged 8,702 fires, 63 deaths, 443 injuries and 126.7 million dollars in property damage, during the ten-year period 1981-1990. These losses accounted for 11 to 12% of the corresponding fire losses in Canada.

Homes, representing one/two family dwellings, apartments and mobile homes, account for nearly one-third of all fires in Alberta and are responsible for 68% of fire deaths, 54% of fire injuries, and 25% of dollar losses in the province (Table 1). Fires per 1000 homes have declined steadily during the past twenty years despite a continuous increase in the housing population in Alberta.

Table 1. Average Fire Losses in Alberta and Alberta Homes (1981-1990)

	FIRES	DEATHS	INJURIES	$ LOSSES
Alberta	8,702	63	443	126,744,301
Alberta Homes	2,534	43	238	32,146,016

Relative to their proportional representation in the population, children five years and younger, the elderly 61 + years and young adults between 16 and 25 years of age are at the highest risk for home fire deaths. On the same basis, persons between 16 and 40 years of age are at the highest risk for home fire injuries. The male:female ratio for civilian fire deaths and injuries in Alberta are 2:1 and 1.7:1.

Fire death rates (per 100,000 population) for the province and its homes have declined during the past decade. However, both civilian and firefighter injury rates have remained fairly stable in the same period. In 1990, fire death and injury rates were 1.3 and 17.6 in Alberta compared to 1.7 and 14.0 in Canada.

Smoke alarms were not installed in 52% of homes that had fires. Thirty-eight percent of home fire deaths occurred where smoke alarms were installed and 62% in homes without smoke alarms. The lack of a battery, dead battery, electricity off or not connected were responsible for alarm failures in 40% of home fires.

The major known causes of home fires are: cooking (32.1%), home heating (12.0%), smoking (11.4%), children playing with fire (7.7%), arson/set fires (7.7%), and electrical (4.0%). The major known causes of fatal home fires are: smoking (31.4%), home heating (14.8%), cooking (11.2%), children playing with fire (9.8%), arson/set fires (5.6%), and electrical (4.0%). The major known causes of fires which inflicted injuries are: cooking (28.0%), smoking (21.1%), home heating (14.3%), children playing with fire (10.9%), arson/set fires (6.7%), and electrical (4.3%).

Concluding remarks

With the expectation of Albertans for more efficient allocation of limited resources, a new approach is emerging in the safety arena. Some key features of this approach are:
- dispelling the myth that government can single-handedly address safety issues
- emphasizing that the primary roles of government are to educate, inspire, inform, advocate, assist and facilitate mutually beneficial partnerships among all stakeholders
- the government moving from a role of intervention to one of facilitation, and
- becoming more relevant and effective in identifying (ex: fire loss statistics) and responding to safety issues.

SOURCE: Fire Commissioner's Office, Alberta Labour

Burn injuries in native Canadians: a 10-year experience

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Between 1977 and 1986, 1598 patients were admitted to the Firefighters' Burn Unit of the University of Alberta Hospital in Edmonton, Alberta. One hundred and twenty-five (7·8 per cent) of these patients were Treaty Indians or Metis compared to 4·2 per cent of the general population in the same given area. The data show native people suffered larger total body surface area (TBSA) burns, were hospitalized on average 16·9 days longer and required 0·7 more operations than their non-native counterparts. Natives are also three times more likely to remain within the health care system as inpatients for rehabilitation after acute burn management has been completed. Mortality rates as a result of these burns were similar for natives (4·8 per cent) and non-natives (4·3 per cent). This review indicates that the native population is at higher risk of suffering burn injury even after adjusting for certain demographic variables, consequently impacting the utilization of the health care system.

Introduction

It is generally held assumption that Canada's native population is disadvantaged in its ability to gain access to and utilize social, educational and health-related programs and facilities. Their life-expectancy is 10 years less than the national average; the infant mortality rate 60 per cent higher; and postnatal mortality rate 100 per cent higher than the national average (Shah and Farkas, 1985). Natives have higher rates of both infectious and non-infectious disease than non-natives (Shah and Farkas, 1985; Baker et al., 1987). Smoking is highly prevalent among native people in Canada; two recent studies indicate that 55–60 per cent of natives smoked and the majority of smokers were less than 35 years of age (Thomson, 1983; McIntyre and Shah, 1986). The proportion of disabled and handicapped natives is higher than any other segment of the Canadian population (Compilation, 1981; Tervo, 1983), and mental health disorders and problems resulting from drug and alcohol abuse are prevalent (Shah and Farkas, 1985). Mortality and morbidity rates have been consistently higher for natives than non-natives. The most striking contrast between the two groups is the natives' high mortality rate due to accidents and intentional violence (Hislop et al., 1987). It has been reported that alcohol misuse is associated with 25–40 per cent of all native deaths (Jarvis and Boldt, 1982; Schmitt et al., 1966; Young, 1983).

Burns remain a major health problem throughout the world (Demling, 1985). In Canada during 1985, 487 people died in accidents caused by fires and flames, 49 people died of electrical current, and 15 people died of accidents caused by hot, caustic or corrosive substances (Statistics, Canada, 1985). A recent study in British Columbia (Hislop et al., 1987) examining the eight leading causes of accidental death for registered Indians and non-natives in that province, indicated that accidents due to fire were a leading cause of death for natives, second only to motor vehicle accidents. This was particularly so for native males whose mortality rate from accidental death due to fire was 21 per cent; and for native females the rate was 13 per cent. Death due to fire was the fifth most frequent cause of death for non-natives accounting for 5 per cent of all accidental deaths. Although house fires account for less than 5 per cent of hospital admissions for burns, they were responsible for more than 45 per cent of burn-related deaths, which are due largely to smoke-inhalation injury (Demling, 1985).

The trend in the USA has been toward lower numbers of burn injuries and deaths. This is attributed in part to adoption of smoke detectors, guarding of space heaters and modification of the design and fibre content of sleepwear and nightwear, particularly among children. Formation of service clubs and firefighters associations involved with programmes for public education and fire prevention, as well as building codes requiring more fire-resistant materials and sprinkler systems have also contributed to lower numbers of burn injuries and deaths. In addition, progress in this field has been made by the development of specialized burn treatment centres and the multidisciplinary approach with this type of injury (Feller et al., 1976, 1980).

The objective of our study was to ascertain if the native population from our referral area is at greater risk for severe burns than the general population and, if so, are there differences in types of burns experienced, subsequent treatment received, and cost of hospitalization given that patient management is similar?

Methods

A retrospective, case control study was undertaken with data relevant to the objectives of our study being extracted from the Burn Unit Registry which is part of the Firefighters' Burn Unit at the University of Alberta Hospital. Although it is not absolute that the Registry is population

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based, the Firefighters' Burn Unit cares for the majority of severely burned patients from northern Alberta, an area of over 500 000 km² (data from Alberta Bureau of Surveying and Mapping, Edmonton) and serving a population of 1·4 million people. Referral to the burn centre would include surviving patients with burn injuries that involve more than 25 per cent total body surface area (TBSA), full thickness burns involving more than 10 per cent TBSA, and critical burns to the hands, face, eyes, ears, feet or perineum. This would also include burn patients with inhalation injuries, significant electrical burns and multiple trauma. The 1981 Statistics Canada Census indicates that approximately 54 000 native people live in the region served which accounts for 4·2 per cent of the population for the area served by the Firefighter's Burn Unit. Approximately 60 per cent of natives remain in rural or isolated communities in spite of the trend in recent years for natives to move to urban areas.

The Burn Unit Registry contains data collected over a 10-year period from 1977 to 1986, on all burn patients admitted to the University of Alberta Hospital Burn Unit from within the referral area. There are approximately 500 items of information dealing with demographics, epidemiology and medical/surgical treatment entered on each patient. This basic set of data is augmented by auxillary computer files in which more detailed information on certain aspects of specific patients are stored. The information is a numerical matrix-type data-base which can be used in conjunction with many available statistical packages. Information on each registered patient includes a history with family and occupational background, items about the aetiology of the burn, where the burn took place, treatment and outcome, laboratory investigations and reviews of pathology material. The registry is continually monitored and updated when additional information is forthcoming and the data-base is reviewed by registry personnel; nurse, coder and statistician working in concert with surgeons and physicians.

Analysis was done on the Amdahl 5870 using an SPSSX statistical package to compute basic descriptive statistics, and to detect any significant differences between the variables using chi-square and *t*-tests, analysis of variance and analysis of covariance where applicable. Probability for all tests was taken at the 0·05 level.

Treaty Indians and Metis were classified as native people; all other racial groups were classified as non-native (over 96 per cent of the non-native group were Caucasian).

Results

Table I shows that during the 10-year period of 1977 to 1986 there were 1598 patients registered in the Burn Unit. One hundred and twenty-five native people constituted the study group; 1473 non-native people became the control group. Treaty Indians and Metis accounted for 7·8 per cent of all burn admissions from the referral area. In contrast, this group accounts for only 4·2 per cent of the general population in the same given area according to the available census figures.

Within the study group, there are 45 (36 per cent) females and 80 (64 per cent) males; within the control group 293 (20 per cent) females and 1180 (80 per cent) males. A chi-square comparison showed a significant difference for gender ($P < 0·01$) between the two groups with a larger percentage of females being found in the native

The average native age was 19·7 ± 18·3 years; non-native 26·5 ± 19·1 years which was significantly different ($P < 0·05$). Fifty per cent of native patients were less than 18 years of age and 4 per cent were greater than 65 years. Comparatively, 30 per cent of non-natives were less than 18 years and 5 per cent greater than 65 years. This indicates a tendency for the native group to be younger than the non-native group in the burn population, a trend also found in the general population. Mortality rates were 4·8 per cent for natives; 4·3 per cent for non-natives, a difference which was not statistically significant. There was a significant difference ($P < 0·05$) between the groups for time spent in hospital with natives spending 16·9 days more. Natives were less likely than non-natives to be discharged home (natives 76·8 per cent, non-natives 88·6 per cent) and more likely to be discharged to an auxillary or peripheral hospital (natives 18·4 per cent, non-natives 7·1 per cent).

Table II outlines certain burn descriptors by racial origin: environment, instigation, contributing factors and mode of travel. The home environment was the location of the burn for 75·2 per cent of the natives and 45·1 per cent of non-natives. In contrast, the work environment was the site of injury for 4·0 per cent of natives but 36·5 per cent of non-natives. Accidental circumstances were the leading cause of instigating events for all burn patients (92·8 per cent of native patients and 97·2 per cent of non-native patients). Native patients were burned in criminal circumstances, e.g. suicide, child abuse, or as deliberate acts by other people, in 7·2 per cent of cases compared to 2·8 per cent in non-natives ($P < 0·05$).

Contributing factors specifically involved in the circumstances of the burn injury included: consumption of alcohol, tobacco smoking, street drug consumption and previously diagnosed psychiatric disorders. Alcohol was identified as a contributing factor in 21·6 per cent of the native burns and 4·2 per cent in non-native burns; smoking in 4·8 per cent of native burns and 3·9 per cent in non-natives. Street drug consumption was involved in 2·4 per cent of native patients and 0·2 per cent of non-native patients. Contributory factors were examined while controlling for racial origin and gender. The major difference comes in the alcohol category where for both males and females the natives have a much higher incidence than non-natives ($P < 0·05$).

The mode of transportation to the Burn Unit was different for natives than non-natives. Road ambulance was utilized by 67·2 per cent of natives and 51·3 per cent of non-natives; air ambulance by 16·8 per cent of natives and 7·0 per cent of non-natives; and private vehicle by 12·0 per cent of natives and 39·5 per cent of non-natives.

Table III addresses burn aetiology by racial origin and sex. This has been categorized as fire and flames, hot water scald, explosive gases (propane, natural gas, gasoline, methyl hydrate), electrical current, thermal contact, and other (steam, chemical, friction, molten lead, hot tar and grease). The three major causes of burn injury (fire and flames, hot water scald, explosive gases) accounted for 82·4 per cent of native and 70·5 per cent of non-native burns. Hot water scalding with 31·1 per cent of natives and 35·5 per cent of non-natives was the leading aetiological agent for burns in females of both racial groups. The leading cause of burns in native males was fire and flames with 46·3 per cent, and the leading cause of burns in non-native males was explosive gases with 32·9 per cent.

Table IV indicates total burn surface area (TBSA) and

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Table I. Demographic and hospital administration data by racial origin ($x \pm SD$ or *n*, %)

	*Natives**	*Non-natives†*	*Probability level*
Gender (no.)			
Male	80 (64·0%)	1180 (80·1%)	($P<0·01$)
Female	45 (36·0%)	293 (19·9%)	($P<0·01$)
Age (yr)	19·7 ± 18·3	26·5 ± 19·1	($P<0·05$)
Mortality (no.)			
Alive	119 (95·2%)	1410 (95·7%)	n.s.
Dead	6 (4·8%)	63 (4·3%)	
Days in hospital	42·3 ± 39·9	25·4 ± 30·6	($P<0·05$)
Type of discharge (no.)			
Home	96 (76·8%)	1305 (88·6%)	($P<0·05$)
Other (auxillary or peripheral hospital, hostel)	23 (18·4%)	105 (7·1%)	
Dead	6 (4·8%)	63 (4·3%)	

*n=125 (7·8%).
†n=1473 (92·2%).

Table II. Burn descriptors by racial origin

	Natives		*Non-natives*		*Probability level*
	n	%	*n*	%	
Environment					
Home	94	(75·2)	664	(45·1)	($P<0·05$)
Work	5	(4·0)	537	(36·5)	
Other	26	(20·8)	272	(18·5)	
Instigation					
Accident	116	(92·8)	1432	(97·2)	($P<0·05$)
Deliberate	5	(4·0)	19	(1·3)	
Other (suicide, child abuse)	4	(3·2)	22	(1·5)	
Contributing factors*					
Alcohol	27	(21·6)	62	(4·2)	($P<0·05$)
Smoking	6	(4·8)	57	(3·9)	
Street drugs	3	(2·4)	3	(0·2)	
Psychiatric	1	(0·8)	17	(1·2)	
Mode of travel					
Road ambulance	84	(67·2)	755	(51·3)	($P<0·05$)
Air ambulance	21	(16·8)	103	(7·0)	
Private vehicle	15	(12·0)	582	(39·5)	
Other (includes ambulatory, police transport, commercial air)	5	(4·0)	33	(2·2)	

*Numbers relate only to those cases where contributing factors were identified.

Table III. Aetiology by racial origin and sex

	Native				*Non-native*			
	Male		*Female*		*Male*		*Female*	
Aetiology	*n*	%	*n*	%	*n*	%	*n*	%
Flames and fires	37	(46·3)	18	(40.0)	259	(21·9)	72	(24·6)
Hot water scald	13	(16·3)	14	(31·1)	178	(15·1)	104	(35·5)
Explosive gases (propane, natural gas, gasoline, methyl hydrate)	15	(18·8)	6	(13·3)	388	(32·9)	37	(12·6)
Electrical current	4	(5·0)	1	(2·2)	102	(8·6)	4	(1·4)
Thermal contact	2	(2·5)	3	(6·7)	76	(6·4)	32	(10·9)
Other (steam, chemical, friction, molten lead, hot tar, grease)	9	(11·3)	3	(6·7)	177	(15·0)	44	(15·0)

Table IV. Burn treatment by racial origin ($x \pm$ s.d. or n, %)

	Natives*		Non-natives†		Probability level
Total burn surface area	21·1 ± 20·1		17·8 ± 19·7		($P<0·05$)
Treatment	*n*	%	*n*	%	
Non-operative	43	(34·4)	691	(46·9)	($P<0·05$)
Surgical with healing	76	(60·8)	719	(48·8)	
Surgical with death	4	(3·2)	26	(1·8)	
Palliation	2	(1·6)	36	(2·4)	
No. of surgical procedures	1·7 ± 1·7		1·0 ± 1·4		($P<0·05$)
	n	%	*n*	%	
Zero	45	(36·0)	727	(49·4)	($P<0·05$)
One	35	(28·0)	447	(30·4)	
Two	16	(12·8)	157	(10·7)	
Three‡	29	(23·2)	141	(9·6)	

*$n=125$.
†$n=1472$.
‡Count does not include one patient remaining in hospital.

cent; whereas it was 17·8 per cent in non-natives ($P<0·05$). Treatment was less likely to be non-operative for natives (natives 34·4 per cent, non-natives 46·9 per cent) and more likely to involve 'surgical intervention' (natives 64 per cent, non-natives 50·6 per cent). For natives requiring operations there was an average of 1·7 surgical procedures; non-natives 1·0. Of those patients requiring three or more operations during their stay in hospital for the management of burn wounds 23·2 per cent were natives, 9·6 per cent non-native.

Because there were significant differences between native and non-native groups for sex ratios and ages, the data were further analysed by adjusting for these factors. The dependent variables examined were days in hospital and number of surgical procedures. There was a signficant difference between native and non-native males in the number of days in hospital ($P<0·002$) when age was controlled. There was no significant difference for males in the number of surgical procedures. A similar analysis for females showed a significant difference for days in hospital ($P<0·001$) and number of surgical procedures ($P<0·05$).

The initial review of discharge mortality, instigation, aetiology, mode of travel, type of burn treatment, type of discharge and burn environment showed significant differences between natives and non-natives. When comparisons were made for males alone, it was found that there remained significant differences ($P<0·05$) in burn environment, aetiology, mode of travel, and type of discharge, but no significant differences in discharge mortality, instigation, and type of burn treatment. Females retained significant differences ($P<0·05$) in mode of travel, type of burn treatment, and type of discharge, but no significant differences for discharge mortality, burn environment, instigation, and aetiology.

An examination of the same variables controlling for age and sex together showed that many of the significant differences remained between the native and non-native groups. For males, with the age controlled, there were significant differences between groups for days in hospital ($P<0·001$), total burn surface area ($P<0·05$) and number of surgical procedures ($P<0·001$). The native group had higher values for all variables. Using the same analysis for females, with age controlled, there was a significant difference between the native and non-native groups for days in hospital ($P<0·001$) and number of surgical procedures ($P<0·05$). The native group had higher values for each of these variables. There was no significant difference between groups for total burn surface area when controlling for age and sex.

Discussion

Native people made up approximately 4·2 per cent of the total population of 1·4 million people served by this Burn Unit. With an overall incidence of 7·8 per cent of all burn admissions, native people have accounted for almost twice as many hospitalized burn victims as would be expected from that given population.

The trend towards a difference in age at burn between the two groups may be a result of a higher incidence of paediatric burns in that native group or simply a reflection of the fact that the overall age of Canadian natives is younger than the general population (Statistics Canada, 1981). Fifty per cent of all native burn patients are children less than 18 years of age, and within this group, accidents, injuries and violence account for 40 per cent of the deaths (Bain, 1982). Non-native burn patients less than 18 years of age make up only 30 per cent of the non-native burn group. The large difference in proportion of burn patients less than 18 years of age (natives 50 per cent, non-natives 30 per cent) may be a reflection of different demographic patterns within the two communities.

Overall mortality rates were similar but total burn surface area was larger for natives, perhaps due to the fact that alcohol and street drugs are used to a greater extent in the native population, leading to an altered level of consciousness at the time of burn and thus a more prolonged exposure to flames and smoke.

Non-accidental causes of burns in natives were double that of non-natives. Alcohol, as a related cause of burns, was five times more frequent among natives than non-natives; street drugs twelve times more frequent. The latter should be cautiously interpreted as there were a limited number of cases and the adequacy of reporting may be incomplete.

High unemployment and lower average age of the native population reduces the potential risk of burn injuries occurring in the workplace whereas non-natives are more

frequently employed in the petrochemical industry, a source of high occupational risk for burn injury in this area, leading to an increase for this group.

Over 75 per cent of native burns (compared to 45 per cent for non-natives) occur within the home leading to both personal and property damage, thus fewer natives have homes to be discharged to upon completion of active treatment. Given this lack of family resources and greater distance from their residence it is understandable that native patients would remain in the hospital longer and require greater support in the form of rehabilitation services through regional and auxillary hospitals than non-natives. In addition, those burn injuries requiring rehabilitation only add to an already higher than average proportion of disabled and handicapped among the native population (Shah and Farkas, 1985).

Since, according to Statistics Canada 1981 Census, 61 per cent of natives live in isolated northern communities it is understandable that there is a higher utilization of the air ambulance service among native patients. It is also understandable that this may create a delay in initiating appropriate treatment to these people while being transported via fixed wing aircraft to the Burn Unit.

When a more detailed analysis, controlling for age and sex, was conducted, some of the earlier differences noted between natives and non-natives disappeared. Native males came closer to the results exhibited by non-native males. A similar trend occurred for females but this was not as pronounced as in the males. However, there continued to be marked differences in the number of days spent in hospital. Natives spent approximately 17 days longer in hospital than non-natives. Individual patient costs per hospital bed in Alberta Hospital Burn Unit were determined to be $693 Canadian (£319) per day in 1986. Consequently, the average stay for natives cost approximately $11 000 (£5070) more than for non-natives.

Conclusions

Native people accounted for almost twice as many hospitalized burn victims as would be expected from that given population. Overall mortality rates were similar but total burn surface area was larger for natives. Non-accidental causes of burns in natives were double that of non-natives. Alcohol, as a related cause of burns, was five times more frequent among natives than non-natives. Over 75 per cent of native burns (compared to 45 per cent for non-natives) occur within the home. There was a significant difference in the number of days in hospital, with natives spending 17 days longer in hospital than non-natives. Natives require air or road ambulance transport more often, receive more operations, and tend to be discharged to auxillary hospitals more than non-natives.

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Profile of the paediatric burn patient in a Canadian burn centre*

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Five hundred and eighty-three children (0–18 years old), consisting of 33.4 per cent of all burn inpatients, were admitted to the University of Alberta Hospitals over an 11-year period (January 1978 to December 1988). Demographic and outcome variables, in addition to aetiological factors, were examined. 48.4 per cent of burns occurred in children < 4 years of age, with males predominating in every age group ($P < 0.001$). Children had smaller burns, a higher incidence of scalds, less inhalation injuries and a lower mortality compared to adult burn patients admitted over the same time period ($P < 0.05$). There was a low incidence of confirmed child abuse by burns (1.4 per cent). High-risk environments identified were the home (74.6 per cent of burns) and recreational settings (12.4 per cent of burns), mainly occurring around campfires. Native children were overrepresented in the burn population compared to the general population by a factor of approximately 10 : 1. Scald prevention, high-risk environments (home and recreational), high-risk populations (male and natives) and unsafe practices with flammable liquids (petrol in particular) should be emphasized in paediatric burn prevention programmes.

Introduction

Thermal injury is the third most common cause of injury-related deaths in the industrial world, accounting for more than 1300 childhood (0–14 years old) deaths per year in the USA (Robinson and Seward, 1987) and approximately 120 deaths per year in Canada (Statistics Canada, 1986). In addition, for every paediatric death there are approximately 50 children who survive burns which are severe enough to require admission to hospital (Guzzetta and Holihan, 1988). While the numbers of deaths reflect the importance of the subject, its true enormity is portrayed by expressing these losses in potential years of life lost before the age of 65. Thus, 101 000 life-years were lost in the USA in 1985 from 1461 burn deaths (0–19 years old) at a cost to society of $3.5 billion (McLoughlin and McGuire, 1990).

Burns are therefore an enormous societal and personal burden. However, there is a dearth of information in Canada concerning paediatric burn injuries. In order to address this deficiency, we compared the demographics, hospital course and outcome of paediatric and adult burns and examined the aetiology of paediatric burns in a provincial burn unit over an 11-year period.

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Patients and methods

A retrospective study of 583 children (0–18 years of age) with burns admitted to the University of Alberta Hospitals over an 11-year period (January 1978 to December 1988) was undertaken. These included patients treated for burns within and outside the Firefighters' Burn Unit (FBU). The relevant data were retrieved from the Burn Treatment Registry, a computerized registry, containing over 500 items of information on each burn patient admitted to the hospital. The Registry has previously been described in detail by Callegari et al. (1989). Patients excluded from the data registry and this study include those admitted for secondary or reconstructive surgery and those who suffered either an inhalation or chemical ingestion injury without a surface area burn.

This burn unit is the referral center for Northern Alberta and the North West Territories, an area of over 500 000 km^2, serving a total population of over 1.4 million people. This area includes a relatively large native population (Treaty Indians and Metis were classified as native people) which is incompletely enumerated but is estimated, from Statistics Canada data, at approximately 4.3 per cent of the total population, of whom a third are < 19 years of age (i.e. 1.4 per cent).

The distances involved in transporting critically ill patients to Edmonton are extensive, up to 2000 km from some outlying communities, many of which have sparse or no medical facilities. Thus prolonged transportation intervals (up to 24 h in some instances) are not uncommon. Most physicians who serve the outlying communities and reserves have Advanced Trauma Life Support training, during which it is recommended that burn patients be referred to the regional burn unit according to the American Burn Association guidelines. These include partial and full skin thickness burns involving more than 10 per cent BSA in patients under 10 and over 50 years of age; partial and full skin thickness burns greater than 20 per cent BSA in other age groups; partial and full skin thickness burns with serious threat of functional impairment that involve the face, hands, feet, genitalia, perineum and major joints; full skin thickness burns greater than 5 per cent in any age group. Burn patients who do not meet these criteria may be treated in local medical centres or regional general hospitals.

Inhalation injuries were diagnosed according to criteria reported by Tredget and Shankowsky (1990). A recreational burn was defined as one occurring outside the 'home' environment and involving a recreational setting and/or activity, for example, camping in a park or playing in a street. Statistical analysis of the data was performed using the SPSSX statistical package to compute basic descriptive statistics, and to detect any significant differences between the variables using chi-square and *t*-tests and analysis of variance where applicable. *P* values (two-sided) less than 0.05 were considered statistically significant.

Results

Demographic data

The 583 children and young adults (0–< 19 years old) with burns accounted for 33.4 per cent of all 1744 burn patients admitted during the 11 years under study. In comparison, 32.4 per cent of Northern Alberta's population is less than 19 years of age. Almost half of the paediatric burns (48.4 per cent) occurred in children less than 4 years of age (*Figure 1*), with males outnumbering females in every age group ($P < 0.001$, *Figure 2*). Most of the children were Caucasian (80.6 per cent), while Treaty Indians and Metis accounted for 13.4 per cent of paediatric burn admissions. This is almost 10 times their representation within the general population (1.4 per cent). Of the 583 children there were 14 Oriental (2.4 per cent), 16 East Indian (2.7 per cent), three black-skinned (0.5 per cent) and two Inuit (0.3) per cent children.

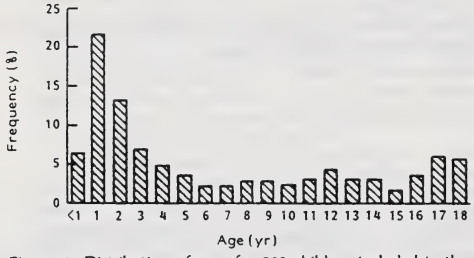

Figure 1. Distribution of ages for 583 children included in the study.

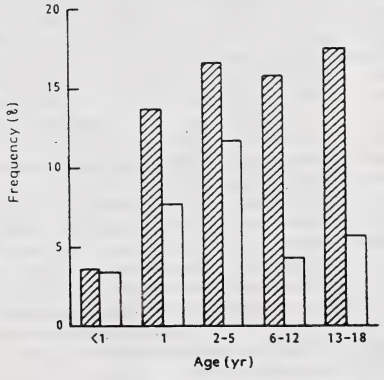

Figure 2. Distribution of age by gender among 583 children. ▨, Male; □, female.

Severity of burn injury

The mean total body surface area (TBSA) burned was 12.3 ± 14.2 per cent (range 1–100 per cent TBSA), which is significantly lower than the mean TBSA in 1161 adult patients treated by the FBU over the same time period (16.4 ± 18.9 per cent, $P < 0.01$). Nineteen children or 3.3 per cent of all burned children suffered injuries greater than 50 per cent TBSA, while nine of these had burns ≥ 70 per cent TBSA. The percentage TBSA burned did not vary significantly with age or sex (male, 12.5 per cent; female, 11.8 per cent; $P < 0.05$).

Aetiology of burns

Children had a significantly higher incidence of scalds and a significantly lower incidence of flash injuries compared to the adult patients ($P < 0.05$, *Figure 3*). Scalds accounted for close to half of all burns in children, followed by flame, flash and contact burns (electric irons, radiators, hot embers). Children with scalds were younger (mean = 2.7 years) than children with flame and flash injuries (10.0 and 12.5 years respectively; $P < 0.01$). Flammable gases, liquids and matches were identified in 77 per cent of flash and flame

Table I. Combustible agents involved in 219 flame and flash injuries (percentage calculated on 168 known causes)

Combustible agent	*No*	*%*
Petrol alone	64	38.1
Petrol and matches	16	9.5
Natural gas	20	11.9
Propane	12	7.1
Lighters	12	7.1
Matches alone	10	5.9
Kerosene	6	3.6
Matches and other	4	2.4
Barbeque fluid	3	1.8
Methyl hydrate	3	1.8
Other	18	10.7
Unknown	51	
Total	219	100.0

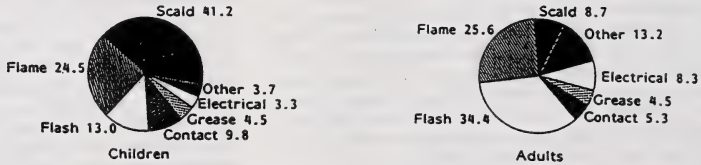

Figure 3. Aetiology of burns in 583 children compared to that in 1161 adults admitted over the same timespan.

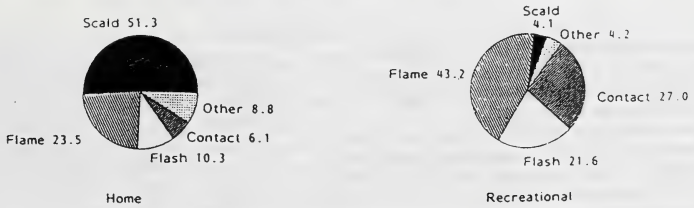

Figure 4. Aetiology of burns in the home (429 children) compared to those occurring in recreational settings (74 children).

Table II. Environment: where did the burns occur?

Place	*No.*	*%*
Home	429	73.6
Recreational	74	12.7
Occupational	30	5.1
Motor vehicle accident	23	3.9
Temporary domicile	16	2.7
Public building	7	1.2
Hospital	1	0.2
Other	3	0.5
Total	583	100.0

Table III. The circumstances associated with burns occurring in a recreational setting

Cause	*No.*	*%*
Campfires		
Walked or fell	24	32.4
Poured petrol	11	14.8
Other flammables	3	4.1
Threw aerosol can	5	6.8
Scalds	3	4.1
Other	5	6.8
Playing*	12	16.2
Tent fire	4	5.4
Motorcycle	2	2.7
Motor boat (explosions)	2	2.7
Power transformer	2	2.7
Assault (set on fire)	1	1.4
Total	74	100.0

*Unsafe environments or practices (e.g. dumps, firecrackers)

Table IV. Comparing aetiology and environment of burns in native ($n = 78$) and non-native ($n = 505$) children

	Natives		*Non-natives*		
	No.	*%*	*No.*	*%*	
Aetiology					
Scald	26	33.3	214	42.4	
Flame	30	38.5	113	22.4	($P<0.05$)
Flash	9	11.5	67	13.3	
Thermal contact	4	5.1	53	10.5	
Grease	4	5.1	22	4.4	
Electrical	3	3.8	16	3.2	
Other	2	2.6	20	4.0	
Environment					
Home	65	83.3	364	72.1	
Recreational	4	5.1	70	13.9	($P<0.05$)
Work	0	0.0	30	6.0	
Other	9	11.5	41	8.1	

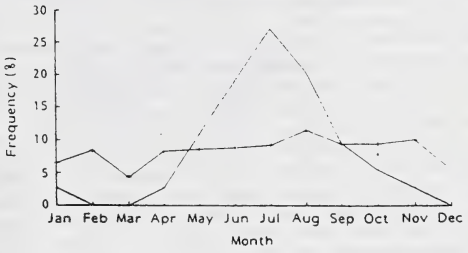

Figure 5. Seasonal variation in recreational burns (—●—) compared to all other burns (—|—).

injuries, with petrol being implicated in close to half of known cases (*Table I*).

The vast majority of scalds occurred in the home (91.7 per cent). A review of 46 childhood scalds that occurred over a 1-year period (1 January to 31 December 1986), showed that 76 per cent were due to hot liquid spillages (water, tea, coffee, soups). The remainder (24 per cent) were caused by children or their caretakers turning on the hot water faucets of sinks or tubs in error.

Nearly three-quarters of all burn injuries occurred in the home while 12.7 per cent occurred in recreational settings (*Table II*). There was no significant difference in percentage TBSA and length of hospital stay when comparing home to recreational burns. However, children who suffered burns in a recreational setting were significantly older than children who were injured at home (8.6 ± 5.8 years vs 5.5 ± 5.4 years; $P < 0.01$). Scalds predominated in the home, followed by flame injuries. In contrast, flame injuries were much more common in the recreational setting, followed by hot solid contact burns and flash injuries (*Figure 4*). There was a marked seasonal variation in recreational burns compared with all other burns, with the peak incidence occurring in the summer months (*Figure 5*). Campfires accounted for 68 per cent (50/74) of recreational burns (*Table III*). One in three were associated with inappropriate use of petrol or other flammable agents.

All occupational burns occurred in young people between 16.5 and 19 years of age. Flash and flame injuries

accounted for 53 per cent (16/30) of occupational burns involving petrol (8/16), propane (4/16) and natural gas (4/16). Other injuries included scalds (5/30), grease (5/30) and electrical burns (4/30).

The vast majority of burns (96.6 per cent) were unintentional. Eleven children (1.9 per cent) were burned deliberately by other children or siblings, eight were victims of child abuse (1.4 per cent), and there was one attempted suicide (0.2 per cent).

Apart from a significantly higher incidence of flame burns and a lower incidence of recreational injuries ($P < 0.05$), the aetiology of burns among native children was not substantially different from non-natives (*Table IV*).

Hospital course and outcome

Almost half of the children (46.5 per cent) had at least one surgical procedure for burns, mainly eschar debridement and split thickness skin grafting. The average number of surgical interventions was 1.7 per patient (range 1–9). The average length of hospital stay for all patients was 23.0 ± 27.2 days (median 16 days; range 1–267 days). Although median lengths of hospital stay were similar (16 days), children who required surgery ($n = 271$) had almost three times the average length of stay (35.9 ± 34.4 days) compared with the 312 children who did not require surgery (12.1 ± 9.0 days, $P < 0.01$), due to the skewed distribution of the former group.

The incidence of inhalation injuries was significantly higher among adults compared with children (10.2 per cent vs 2.9 per cent, $P < 0.05$). Children with inhalation injuries had significantly greater burns compared with those without inhalation injuries (57.5 per cent ± 28.1 vs 10.9 per cent ± 11.1). In addition, the presence of an inhalation injury was significantly associated with death, being present in five of the eight children who died compared to 12 of the 575 children who survived ($P < 0.01$). Patients who sustained an inhalation injury and survived had a significantly prolonged length of hospital stay (117.9 ± 86.1 days; median = 65 days; $n = 17$) compared with survivors who did not have an inhalation injury (21.3 ± 20.4 days; median = 16 days; $n = 566$; $P < 0.01$).

Eight children died, giving an overall mortality rate of 1.4 per cent (*Table V*), which was significantly lower than the adult mortality rate of 5.3 per cent ($P < 0.05$). Mortality was related to increasing percentage of TBSA burned. No significant trends in age distribution, percentage of TBSA, length of stay or mortality were observed during the study period.

Discussion

In general, burns in children were less severe compared with burns in adult patients, as indicated by a smaller mean percentage TBSA, less flash and flame burns and a lower incidence of inhalation injuries among children. This may have contributed, in part, to the lower mortality rate among children compared with adults. However, it does not imply that hospital admission criteria for children with burns should be made less stringent. Burn size, depth and location (as described in the 'Patients and methods' section), the circumstances leading to the injury and the ability of the parents to cope must all be considered when determining paediatric admission criteria.

The vast majority (98.6 per cent) of burned children who reach hospital survive, although the addition of an inhala-

Table V. Demographic data on the eight children who died

Age	*Sex*	*TBSA*	*Survival time LOS*	*Cause/ location*	*Inhalation injury*	*Course*
2 yr	M	100	3 h	Flash Natural gas Home	Yes	Palliative care
18 yr	M	95	28 h	Flash Natural gas Furnace Home	Yes	Self-extubation Failure to reintubate
11 yr	M	90	6 h	Flame Matches Petrol	Yes	Acute renal failure Cardiac arrest
8 mth	F	70	12 h	Scald Tub Home	No	Hypotensive Metabolic acidosis ($H^+ = 100$) Cardiac arrest
3 yr	M	40	72 h	Flame Lighter Clothing Home	No	Hypernatraemia (Na = 194 mmol/l) Rapid correction causing cerebral oedema and brain death
5 yr	M	30	10 h	Flame Home	Yes	Pulled pulseless from house Cardiac arrest prior to transfer Severe acidosis, cerebral oedema Probable carbon monoxide poisoning
4 yr	M	30	5 d	Flame Matches Sofa Home	Yes	Pneumococcal pneumonia ARDS
17 yr	M	40	26 h	Electrical Pylon Alcohol	Airway injury	Bronchoscopy/CXR N on admission Airway obstruction at 26 h Failure to intubate

tion injury is associated with a higher mortality. A previous analysis of all burn patients admitted to the University of Alberta Hospitals, including the children reported here, revealed that inhalation injury adversely influenced survival in all patients independent of the TBSA burned and reversed the otherwise favourable survival rates in children (Tredget and Shankowsky, 1990). While length of hospital stay was prolonged in patients with inhalation injuries, this was related more to the larger burns encountered in patients with inhalation injuries rather than the inhalation injury per se. It should be emphasized that children with inhalation injuries, even with very extensive burns, have an excellent probability of survival when treated in specialized burn units.

The overall mortality in this series was 1.4 per cent, which is comparable with other reports (Thomson et al., 1986; Tomkins et al., 1988). However, comparisons of simple mortality rates between centres are misleading because of differences in patient populations, burn size and type. The percentage survival related to the percentage TBSA is a more accurate indicator of the level of care in a burn unit, although this still does not take into account pertinent factors such as the incidence of inhalation injury, which has a major effect on survival, independent of age and percentage TBSA. Nevertheless, our survival rate of 44 per cent for burns greater than 70 per cent TBSA is comparable with other reports (East et al., 1989).

The low hospital mortality rates should not lead to complacency since, apart from belying the enormous morbidity associated with burns, they do not include the many burn victims who do not survive to reach hospital. Between 1980 and 1989 there were 43 deaths from fires in people less than 19 years of age in Northern Alberta, not including the North West Territories (Wijayasinghe, 1990). Since only eight children died having reached this institution (the major referral hospital for Northern Alberta and the Northwest Territories), we can deduce that for every hospital death, there are at least five others who did not survive to reach the burn unit.

Many of the findings, including the age and sex distribution, type of burn injury and survival rate, broadly concur with those of the National Burn Information Exchange (NBIE) (Feller et al., 1982). The pattern of burn injuries resembles that seen in other developed countries (Langley and Tobin, 1983; Green et al., 1984; Lyngdorf et al., 1986; Gordon and Ramsay, 1986). However some factors, unique to this area, emerged from the present study. These include the low incidence of confirmed child abuse, the higher rate of hospital admission among the native population and the occurrence of burns around campfires, often associated with the misuse of petrol and other flammable liquids.

The incidence of confirmed child abuse by burns was low compared to other series where the incidence varies from 2 per cent (Kumar, 1984), to 4.2 per cent (Stone et al., 1970) and as high as 16 per cent (Hight et al., 1979) of all burns. This low detection rate implies either a low prevalence of child abuse in our population or a reluctance to make such a diagnosis. Every child admitted with burns during the study period was seen by a social worker and the circumstances of the injury were evaluated for possible abuse. Nevertheless, based on our findings of a lower than average rate of child abuse, we are instituting a protocol, similar to that described by Carrigan et al. (1988), which weighs the risk factors for abuse in each burn patient. In this way, we hope to be able to make a more objective assessment of the circumstances of burn injuries.

In a previous analysis of burns in native Canadians, taken from the University of Alberta Hospitals Burn Registry, Callegari et al. (1989) confirmed that native people in Alberta are at a higher risk and suffer more severe burns than non-natives. On closer examination of burns in native children we observed that they were overrepresented in the burn unit compared to the general population by a factor of 10 : 1, and that flame injuries were more common among natives compared to non-native children. This concurs with national data, which indicate that the mortality rate of natives from fire and flames is six times the national average (15.2 vs 2.5 per 100 000 population; Avard and Hanvey, 1989). Poor housing (60 per cent of native homes are without running water, sewage disposal, or indoor plumbing facilities), a higher incidence of smoking and alcohol abuse, high unemployment and larger families resulting in inadequate supervision may all contribute to this problem. Strategies to prevent burns among native people will have to arise from the native communities themselves (Bain, 1982). Such strategies should be aimed at resolving the poor social and economic factors that have made injuries in general the prime cause of death among native children.

We used a broader definition of recreation (location and activity outside of the home) than the International Classification of Diseases code, where recreation is classified by location alone. While recreational settings have been associated with burns in other studies, the contribution of this factor varies depending on cultural, economic and geographical backgrounds. In New England, USA, 37 per cent of paediatric burns were non-residential, with motor vehicles accounting for a quarter of such burns among those aged 15–19 years (Rossignol et al., 1990). In contrast, only 2.5 per cent of paediatric burns in Saudi Arabia were non-residential (Jamal et al., 1990), which is similar to other countries where leisure activities outside the home are uncommon (Abu Ragheb et al., 1984; Mabogunje et al., 1987). Increasing leisure time and the long tradition of outdoor activities in Alberta's provincial and national parks, contribute to the high incidence of campfire burns in this study. Because of this, Parks and Recreation, Canada, are now incorporating burn prevention into their school-based programmes.

The misuse of petrol to ignite fires was also associated with campfire burns. Indeed, petrol, flammable liquids and matches were concomitant in over three-quarters of all flash and flame injuries in this study. Petrol-related burns accounted for 10–23 per cent of annual admissions to the St Paul, Minnesota Burn Center (Williams et al., 1990). A recent report from the Shriners Burn Unit in Galveston, Texas indicated that up to 62 per cent of burn injuries (in children between 10 and 15 years of age) were petrol related; half of the injuries were due to petrol being thrown on a fire while a quarter were associated with petrol sniffing (Cole et al., 1986), a problem also prevalent among Canadian native youths (Boeckx et al., 1977). The public, particularly young people, need to be alerted to the dangers of petrol misuse and the need for continued efforts promoting safety in the use and storage of these agents is evident.

Although the probability of surviving a major burn in Alberta is excellent among children who reach hospital, those living in remote areas are at a geographical disadvantage which may cost lives. For these communities the need to prevent burns is all the more imperative. Thus, burn prevention efforts should be directed at scald prevention, high-risk environments (home and recreational), high-risk populations (male and natives) and unsafe practices with flammable liquids.

INJURIES IN THE HOME AND COMMUNITY WORKGROUP

Acknowledgements

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OCCUPATIONAL INJURIES WORKGROUP

WORKSHOP OUTLINE

WORKSHOP 1: (Thursday, October 22: 09:45 - 12:00)

- Presentation: What's New Internationally (Maureen Shaw)
- Presentation: The Canadian Scene (Herb Buchwald)
- Presentation: Occupational Health and Safety Initiatives in Alberta (Vern Millard)
- Presentation: The Alberta Situation (Hugh Walker)
- Presentation: Review of the OH&S Objectives in the Year 2000 Report (Dave Gibson)
- Participants will identify a sub-set of the Year 2000 Objectives for Occupational Injury Reduction relevant to Alberta, achievable in the near future and of particular interest to the participants
- Participants will choose one of the selected objectives to work on

WORKSHOP 2: (Thursday, October 22: 14:45 - 16:30)

- Participants will meet in the small groups as selected in Workshop 1.
- Each small group will work on one occupational injury reduction objective.
- Each small group will develop goals specific to the selected Year 2000 Objective. Goals must be relevant to Alberta, achievable in the near future (next 1-2 years), and observable/measureable.
- Discussion of potential strategies to reach the goals will start.
- Each small group will report back to the Occupational Health and Safety Workgroup at the end of the session with formalized goals.

OCCUPATIONAL INJURIES WORKGROUP

WORKSHOP 3: (Friday, October 23: 09:15 - 11:15)

- Participants will meet in small groups as selected in Workshop 1.
- Each small group will continue to work on its occupational injury reduction objective.
- Potential strategies will be discussed.
- Each small group will work on activities specific to its selected goals for its Year 2000 Objective. Activities must be relevant to Alberta and must be demonstrably supportive of the Year 2000 Objective. Each activity must have a leader, contact, focus group or champion identified to implement the activity.
- Each small group to report back to the Occupational Health and Safety Workgroup at the end of the session with formalized action plan, including identification of key stakeholders, overall timeline for the activities and outline of measurement approach.

PLENARY SESSION: (Friday, October 23: 11:15 - 12:00)

- Report from the Occupational Health and Safety Workgroup to the plenary session.

OCCUPATIONAL INJURIES WORKGROUP

OVERVIEW

- The Alberta lost-time injury rate declined by 12% in 1991, to 4.38, compared to 4.97 in 1990. This is the lowest value ever reported for Alberta.

- Risk of injury declined in all major industry sectors. The largest declines occurred in: Construction (-22%), Oil Gas and Mines (-16%), Forestry (-15%), and Manufacturing (-14%).

- The three highest risk industry sectors continue to be Forestry, Construction, and Manufacturing.

- The highest risk sub-industries continue to be; meat and poultry packing (19.3), geo-seismic exploration (12.9), trucking (12.7), and metal fabrication (12.1).

- Sub-industries with considerably lower risk, compared to 1990, were: glass and windows (-39%), flooring installation (-29%), sheet metal (-28%), geo-seismic exploration (-27%), well service with rigs (-26%), meat and poultry packing (-24%), and wood and building products (-24%).

- The most frequent types of accident were overexertion (29%), bodily reaction (15%), and being struck by objects (10%).

- The back was the most frequently injured part of body (29%).

- The most frequent type of injury was sprains and strains (49%).

- 21% of injured workers were between 15 and 24 years old. 24% had less than 6 months experience with their employer.

- 34% of injuries resulted in from 1 to 5 lost work days. 19% resulted in more than 50 lost work days.

OCCUPATIONAL INJURIES WORKGROUP

PROVINCIAL TOTALS

The number of lost-time claims decreased by 13.3% in 1991, while the estimated person-years worked decreased by 1.6%; the result was an 11.9% decrease in the lost-time claim rate in 1991 compared to 1990.

The following points summarize the lost-time claims and claim rates for the whole province for 1991.

a) The estimated person-years worked in 1991 decreased by 1.6%.

b) The number of employer WCB accounts decreased by 2.7%.

c) The number of lost-time claims decreased by 13.3%.

d) The lost-time claim rate (per 100 person-years) was 4.38, down about 12% from 1990.

The lost-time claim rate has been declining gradually since 1985, when the rate was 5.54 lost-time claims per 100 person-years. In 1991 the lost-time claim rate was the lowest ever recorded in Alberta.

MAJOR INDUSTRY SECTORS

a. The person-years worked estimates declined in several major industry sectors. The largest percent decreases occurred in construction (-11.3%) and manufacturing (-3.9%). Person-year estimates increased in the forestry sector (+9.1%) and agriculture (+8.5%).

b. Lost-time claims decreased in all industry sectors. The largest percentage decreases were in construction (-31.3%), oil gas and mines (-18.7%), and manufacturing (-16.9%).

c. Lost-time claim rates in all major industry sectors declined in 1991 compared to 1990. The largest declines were in construction (-22%), forestry (-15%), oil, gas and mines (-16%), and manufacturing (-14%).

Each major industry sector consists of a wide variety of industries having a wide range of health and safety risks. For example, the oil, gas, and mines sector includes both the high hazard drilling, exploration, and servicing industries, and the low hazard operation and processing industries.

PERSON-YEAR ESTIMATES AND CLAIM RATES BY DETAILED INDUSTRY

Primary Resource

Very large differences in lost-time claim rates occurred between selected sub-industries within this industry group. Claim rates were high in exploration and logging, moderate in drilling, and well servicing, and low in the operation and processing industries. Coal mining and the tar sands had relatively low lost-time claim rates.

1990 versus 1991

a) Person-year estimates: Person-year estimates decreased slightly in most primary resource industries. The only large decrease in employment occurred in oil and gas well drilling (-10%). Logging activity increased slightly (6%).

b) Lost-time claim rates: Lost-time claim rates decreased or remained unchanged in all sub-industries. The largest change occurred in oil and gas exploration (from 17.6 to 12.9; a 27% decline). Lost-time claim rates in drilling and well servicing continued the downward trend begun in 1988.

Manufacturing

The meat and poultry packing industry again had the highest claim rate in this sector (19.3), but has improved considerably over the 1990 rate of 25.4. There were relatively high claim rates as well in the fabrication and manufacture of metal products industry, the food and beverage industry, and the wood products industry. Low claim rates occurred in printing and publishing, and in the petro-chemical industries

1990 versus 1991

a) Person-year estimates: Person-year estimates decreased in most manufacturing industries, with the greatest decreases occurring in petro-chemical (-14%), and meat and poultry packing (-13%).

b) Lost-time claim rates: Lost-time claim rates in 1991 decreased in most manufacturing industries. The greatest improvements were in meat and poultry packing (-6.1), wood and building products (-2.5), metal products (-2.1) and non-metallic minerals (-2.1).

Construction

Among the major construction industry groups, the highest claim rate in 1990 was for construction of buildings (7.8), followed closely by construction trades (7.6). The lowest rate was for construction of roads and bridges (6.3). Among the special trades, roofing, sheet metal, concrete, and drywall construction trades had the highest lost-time claim rates.

1990 versus 1991

a) Person-year estimates: Person-year estimates decreased for the construction of buildings (-14%), and construction trades (-12%).

b) Lost-time claim rates: The lost-time claim rates in the construction industries have declined substantially in every major group. Claim rates declined in several special trades; particularly large decreases occurred in sheet metal (-5.1) and roofing (-2.5).

Trade

The trade industry includes small retail stores (e.g., jewellery stores) with very low lost-time claim rates (1.7) and the automobile repair industry, with a claim rate of 5.3. Food stores had the highest claim rate in the trade sector (7.0) in 1991.

1990 versus 1991

a) Person-year estimates: Person-year estimates declined in most trade sub-industries. The only increases occurred in machine sales and service (+6%) and food stores.

b) Lost-time claim rates: Claim rates decreased in all trade sub-industries, especially in food stores (from 9.1 to 7.0); and warehouse/wholesale (from 4.6 to 3.5). These changes, however, can be accounted for in part by the reclassification of several large employers within the WCB assessment system.

Transportation and Utilities

The trucking industry was the major source of lost-time claims in this sector, and has the highest lost-time claim rate (12.7). Within this sector, air transportation services had a moderate claim rate, and the claim rates within the railway, utilities and communications industries were quite low.

1990 versus 1991

a) Person-year estimates: The largest increases in activity were evident in pipeline operations (+14%), while there was a 12% decrease in railways and a 7% decrease in radio and television.

b) Lost-time claim rates: The lost-time claim rates decreased or remained unchanged in most sub-industries in this sector in 1991 compared to 1990 levels. The largest decreases were in trucking (from 14.3 to 12.7) and in gas distribution (from 2.1 to 1.6).

Service

Claim rates for all sub-industries in this sector were relatively low; the care of the young, old, and infirm had the highest claim rate in this sector (4.9). Low rates in this industry sector occurred in the education (1.7) and engineering (0.9) industries.

1990 versus 1991

a) Person-year estimates: Person-year estimates for several sub-industries increased in 1991; engineering increased 10%, and care of young, old and infirm increased 3%. Small decreases occurred in hospitals (-4.0%) and hotels/restaurants (-3%).

b) Lost-time claim rates: Lost-time claim rates in the service sub-industries changed only by small amounts in 1991 compared to 1990 levels. LTC rates increased in building services and personal services, and decreased in care of young old and infirm, hotels and restaurants, business services, and engineering.

Public Administration

Sub-industries in this sector include the provincial government, provincial boards and agencies, and the various levels of local government. Claim rates in these sub-industries are generally near or below the provincial average.

1990 versus 1991

a) Person-year estimates: There were very few changes in 1991; local governments tended to increase slightly, while there was a decrease in the provincial government.

b) Lost-time claim rates: Claim rates in this sector decreased in the cities (from 6.1 to 5.7), and in counties and municipalities (from 5.2 to 5.4). The lost-time claim rate for the provincial government decreased from 2.6 to 2.4 lost-time claims per 100 person-year.

DESCRIPTION OF LOST-TIME CLAIMS; 1990, 1991

In this section, lost-time claims are described in terms of (a) source of injury, (b) type of accident, (c) nature of injury, and (d) part of body injured. The percent distribution of 1991 claims is compared with the distribution of claims in 1990.

In addition, some information regarding the age, sex, and experience of injured workers is included, as well as statistics on the duration of the disability (days compensation).

Source of Injury

The four most frequent sources of injury in 1991 were *working surfaces* (12.1%), *bodily motion* (14.8%), *metal items* (9.7%), and *boxes and containers* (10.8%) accounting for almost half of all lost-time claims. The distribution of claims according to source of injury has changed very little since 1990, except that injuries due to bodily motion have increased.

Accident Type

The three most frequent types of accidents in 1991 involved *overexertion* (29.3%), *bodily reaction* (14.8%), and *struck by* an object (10.3%). The distribution of claims according to accident type has changed very little in 1991 compared to 1990.

Nature of Injury

Sprains and strains accounted for 49.2% of claims (up from 45.7% in 1990), followed by *bruises and crushing* (12.0%), and *cuts and lacerations* (9.7%). Occupational disease or illness continues to account for only a small proportion of lost-time claims.

Part of Body

The most frequently injured body parts in 1991 were the back (29.0%), fingers (10.3%), other trunk (10.4%), and ankle or foot (8.6%). The distribution of lost-time claims by part of body injured changed very little between 1990 and 1991.

Injured Worker Characteristics

Men accounted for 73% of lost-time claims in 1991, about 3% lower than in 1990. Conversely, there was a 3% increase in the proportion of claims by women in 1991.

In 1991 about 20% of claimants were young (15-24 years), down from 23% in 1990, and 36% were aged 25-34. Changes from 1990 reflect a gradually aging labour force. Lost-time claim rates for different age groups show that the 20-24 year age group had the highest rate (4.2), followed by the 25-34 year age group (3.8). Note that these rates are based upon employment data from Statistics Canada, and not on AOHS person-years, and therefore cannot be compared directly with other claim rates in this report.

24% of injured workers had worked less than 6 months for their current employer, down from 29% in 1990, and 48% had worked for more than one year, up from 45% in 1990. The risk of a work injury or illness during the first 6 months on the job is estimated to be twice the risk faced by experienced workers (those with more than 1 year on the job).

Days Lost

In 1991, 34% of claims were for 5 or fewer work days lost, and 15% were for between 6 and 10 days lost. Lengthy disabilities (more than 50 days lost) accounted for almost 19% of all lost-time claims in 1991. Compared to 1990, there were somewhat more long duration injuries and fewer short duration injuries reported to and accepted by the WCB in 1991.

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* For detailed figures and tables please refer to "Lost-Time Claims and Claim Rates, 1991 Summary" available through Research and Information Development, Planning and Research Branch, Alberta Occupational Health and Safety, July 1992.

A Safer Canada

Workplace Injuries in Canada

The following is an excerpt from A Safer Canada — Year 2000: Injury Control Objectives for Canada. These proceedings have been edited for this publication

1. Introduction

Work-related injuries and illness are an unacceptable part of work life. In Canada, a compensable work injury occurs every seven seconds, and a worker is killed every two hours of each working day (Bulletin No. 14, Labour Canada, April 1991). In 1989, provincial Workers' Compensation Boards paid nearly $4 billion in benefits to workers. The total costs (including all direct and indirect costs) of work-related injuries have been estimated at almost $20 billion in 1989 (Bulletin No. 14, Labour Canada, April 1991). Almost 621,000 work-related time-loss injuries were reported to Workers' Compensation Boards in 1989. Most frequently, the injuries were caused by over-exertion (28 per cent) or workers were struck by objects (17 per cent). Of all injuries, 27 per cent involved the back (Work Injuries 1987-89, Statistics Canada, Catalogue 72-208, 1991).

2. Issues Related to Setting Objectives

a) If occupational illnesses and injuries are to be significantly reduced, three major inappropriate attitudes that limit the belief that it is possible must be changed.

These inappropriate attitudes are:

- *Occupational health and safety is something separate from people's "real" lives.*

On the contrary, occupational health and safety has to become an integral part of everyday life. Almost all Canadians are workers. Very few do not work full-time or part-time, at home or outside the home. "Safety at work" is as important a part of our lives as the use of seat belts, rails on our basement stairways, and child-resistant medicine bottles.

- *Injury is a natural and expected part of working for a living.*

This attitude has its roots in beliefs such as "danger pay"; that is, compensating workers for taking inordinate risks on the job. The more reasonable expectation is that working will not result in injury or ill-health. When Canadians come to realize this fact, injury on the job will become socially unacceptable just like drinking and driving, and the rate of injuries on the job will fall accordingly.

- *The purpose of the health care system is to respond to injury and illness rather than to prevent it.*

Canada's health care system is still based largely on treating illness and injury once they occur rather than focusing on the improvement of health through a balanced mix of strategies, ranging from health promotion to disease/injury prevention to treatment to rehabilitation. Social marketing campaigns aimed at increasing the public's awareness that injuries are preventable, should also contain messages that reinforce workplace safety and health.

b) The lack of information about injuries, illness, deaths and their causes is a major impediment to evaluating occupational health and safety efforts in Canada.

Data on work-related injuries was the subject of considerable discussion at the symposium. Without comprehensive and accurate information about the current situation, it is not possible to plan and implement optimal programs for protecting the health and safety of Canadian workers.

Statistics Canada provides a National Work Injuries Statistics Program. It is a cooperative arrangement under which provincial and territorial Workers' Compensation Boards supply data on accepted time-loss and permanent-disability claims for work-related injuries and illnesses. However, Workers' Compensation systems were designed principally for paying claims, not for providing information on the needs and the effectiveness of health and safety programs. Furthermore, Workers' Compensation Boards across the country vary somewhat in their record-keeping systems, which makes it difficult to compare statistics between jurisdictions or to calculate national injury or illness rates.

As a priority, there is a need to optimize the use of the existing system and data while striving to improve data support for planning, delivering and evaluating occupational health and safety programs. There is also a need to educate people on the meaning and use of statistics.

In the future, if Canada is to compare injury data with other countries, it will also be necessary to identify and obtain the international data sources necessary to make these comparisons, and where required, to make the necessary conversions to such data to compare them to Canadian data. In the long term, it is believed that Canada should adopt injury reduction objectives aimed at achieving the lowest death and injury rates of any country.

c) Workers who are well informed and knowledgeable about the recognition and prevention of work-related hazards are less likely to be injured or develop occupational illnesses.

Education and information programs are required at several levels. Programs are required in high schools to create new, young workers who are better equipped to perform work in a safe and healthful manner. Programs are required in universities and colleges to ensure that future managerial, technical and professional staff view occupational health and safety as an integral part of work. Educational programs are also required to train more occupational health and safety specialists to support programs in workplaces.

Management and workers need access to accurate, understandable and credible occupational health and safety information. One such data source is already established in Canada: the Canadian Centre for Occupational Health and Safety (CCOHS).

d) The health of workers, as well as their safety, needs to be protected.

Occupational exposure limits, or their variously named counterparts in each jurisdiction, set out the maximum exposures to chemical and physical agents that are permitted in workplaces. In order to be useful, compliance with these exposure limits must be achieved.

To provide consistent protection to workers across Canada, uniform standards are needed. National review, followed by the development of a single, national standard for each chemical or physical agent, and adoption of these national standards in each jurisdiction, is essential.

e) Occupational health and safety programs are needed at many levels of society.

These programs provide a systematic approach to implementing solutions to problems. Some programs, such as national public awareness campaigns, involve the population as a whole; some involve the efforts of persons at many sites within the occupational health and safety infrastructure, such as those that are geared toward occupational health and safety professionals; others operate at a single location, such as at individual workplaces.

National or provincial programs should be encouraged by the federal and jurisdictional governments and by labour and professional associations. They may be most effective, though, if they are developed and operated by industrial associations or large companies due to their very substantial influence on the entire business community. For example, principal contractors in the construction industry could require, as a tender specification, that potential subcontractors have active and effective occupational health and safety programs. Large companies could stipulate similar requirements for maintenance contracts on their sites.

National and provincial programs could include consultation on occupational health and safety programs at workplaces and assistance in establishing specific programs. Examples of such programs include back care, hearing conservation, employee assistance programs and programs for reducing injuries and illnesses among "new workers". Establishing such programs in all workplaces may become an objective for injury control for the next decade. The importance of worker involvement in these programs cannot be overemphasized. Expanded use of joint worker/management occupational health and safety committees will help with the implementation of occupational health and safety programs at individual workplaces.

3. Issues for Active Consideration

The Occupational Health and Safety Work Group identified a number of issues that require further development if significant improvements in workplace health and safety are to be realized. Unfortunately, many of the recommended strategies do not have baseline data sources to track changes in performance. Therefore, the establishment of baselines in a number of areas was identified as a necessary requirement to measure current levels of performance as well as to track changes in performance.

SPORT AND RECREATIONAL INJURIES WORKGROUP

WORKSHOP OUTLINE

Workshop 1: Preventing Sport and Recreational Injuries through Better Design and Maintenance of Facilities

Guy Régnier, Ph.D.

The promotion, over the last 20 years, of sport and physical activity as a means of improving one's quality of life, has led ironically to an increase in the number of sport and recreational injuries. Although it is true that any activity involving human movement such as sport involves a certain degree of risk, sport and recreational injuries are preventable. In order to do so, sport and recreational injury prevention programs have to: 1) identify the risk factors; 2) eliminate them if possible; 3) control them if they can't be eliminated; and 4) make sure no new risks are introduced.

One of the challenges facing injury prevention practitioners in the field of sport and recreational activities is to respect the inherent nature of the activity. How do we make skiing or playing hockey safer without taking the fun, the health benefits and therefore, the people, out of it?

The Haddon matrix[1] has proven to be a valuable framework to design adapted intervention strategies in the field of sport and recreational injury prevention. The original matrix can be adapted to include four major areas of injury prevention in sport and recreational activities: quality of the facilities, quality of the equipments, quality of the leaders, and attitudes and behaviors of the participants. The matrix is completed by looking at each of the four areas across time i.e. before, during and after the event that led to the injury. The 12 cells resulting from the matrix allow one to scrutinize an activity in a multidimensional approach in search of risk factors and possible intervention measures.

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[1] Haddon, W. and S.P. Baker. 1981. Injury control. In *Preventive and Community Medicine*. C. Clark and B. MacMahon (Ed.). Boston: Little, Brown and Co., pp. 109-140.

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This first workshop will use the Haddon matrix as a framework to explore the ways by which better designed and maintained facilities could help prevent or reduce the severity of sport and recreational injuries. Participants will seek: 1) to identify what sport or recreational activities would benefit the most in their community from such an environmental intervention, and 2) what actions could be taken at the community and the provincial levels to facilitate the development and implementation of safety guidelines regarding sport and recreational facilities. Examples will be taken from voluntary safety guidelines developed and implemented in Québec over the last 3 years for ice-rinks, cross-country skiing trails, backyard swimming pools, and baseball, softball and soccer fields.

WORKSHOP 2: "Get Trained": Prevent Injuries In Sport and Recreation by Being "SMART"

Shelby Karpman, MHA, MD, C.C.F.P.

Many sport and recreation injuries can be prevented by providing trained leaders to coordinate and supervise the activity. A tremendous amount of information and resources are available for individuals, teams, and associations to implement into their daily activities to keep it fun and safe.

This interactive workshop will utilize a safety guideline "checklist" to overview safety considerations in your sport and recreation activities, and discuss what existing resources are available to you.

It is the culmination of many small and simple actions that prevent injuries from occurring. Following is an overview of some of these actions.

- Ensure each athlete completes a medical examination given by a physician at the start of the season.
- Keep a medical history of athlete(s) on site.
- Develop safety standards for facilities to be used for practices and events.
- Ensure medical and/or paramedical personnel are present at the event.
- Keep a first aid kit on site.
- Provide coaches and supervising personnel with athletic first aid training.
- Establish safety standards for equipment used in activity.

- Enforce the use of protective equipment. (ie. mouth guards, helmets, protective eye wear).
- Provide educational information to athletes and coaches through newsletters, workshops, and lectures. (ie. safe training principals, nutrition, drugs in sport).
- Complete pre, mid, and post season fitness testing on each athlete.
- Post an emergency protocol and practice it.

WORKSHOP 3: Preventing Sport and Recreational Injuries through the Promotion of Fair Play.

Guy Régnier, Ph. D.

In many contact and collision sports, whether they are played at a competitive or a recreational level, better protective equipment, safer facilities and stricter regulations are not enough to ensure the safety of players. In amateur hockey for instance, it has been estimated that two third of injuries result from an illegal action[2]. What is needed is a modification of players' and leader's attitudes and behaviours toward violent and dangerous play.

This conclusion has led to a worldwide movement in favor of the promotion of fair play and sportsmanship as a means of reducing violence-related injuries in sports such as ice hockey or European football. The concept of sportsmanship has generally been defined as to include values such as respect for the rules, respect for the officials, respect for one's opponent and fairness.

This workshop will review the international initiatives to enhance safety in sports through the promotion of fair play and sportsmanship. Canadian and provincial programs will also be presented and discussed.

One of the major criticisms frequently addressed to such value-oriented promotion campaigns, is their lack of demonstrated effectiveness in changing the behavior of the

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[2] Brust, J.D., Leonard, B., Pheley, A. and Roberts, W.O. 1992. Children's ice hockey injuries. AJDC, vol. 146, pp. 741-747.

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targeted audience. Original and more direct approaches are needed to change players', coaches' and parents' attitudes and behaviors toward violent play in sports.

Participants will seek to identify which aggressive behaviors can lead to injuries and what actions can be taken to eliminate them. Participants will explore different ways by which sport and recreational injuries can be prevented through strategies that actively promote a sense of respect for the rules, for the official and for the opposing players. Two original programs designed to make fair play part of every game played in any contact or collision sport, will be presented and discussed with the participants.

Workshop participants will identify what can be done over the next year to put the active promotion of fair play on the agenda of every sport organisation in Alberta at the provincial as well as at the community level.

SPORT AND RECREATIONAL INJURIES WORKGROUP

Overview

JOANNE VINCENTEN, EXECUTIVE DIRECTOR,

Sport Medicine Council of Alberta

Data from the provinces of Quebec, Ontario, and even the country of Australia, tell us that sport and recreation injuries are by far the leading cause of emergency room attendance. To date, we in Alberta have no provincial data or even national data to specifically tell us the true picture of sport and recreation injuries. I can tell you that last year in Alberta six people died on our ski hills; a two year old girl died of asphyxiation due to hanging because her coat caught part of a metal slide at a playground; 12 people died while cycling; 7 people died while riding an all terrain vehicle; and 43 people drowned. These statistics are a brief overview from the Alberta Coroner's Report. This is just the tip of the iceberg since we know that for every fatal childhood injury, another 45 injuries require hospital treatment, and 1,300 require an emergency room visit.

We cannot begin to imagine the number of sport and recreation injuries that do not result in an emergency room visit but eventually surface in the physician's office or receive self-help at home.

There are a few small steps underway in Alberta to determine how serious the injury situation really is, and what actions should be taken to prevent such injuries.

The Hanna Injury Prevention Project (HIPP) conducted a survey in 1991 of emergency room visits. This small, rural Alberta community has also confirmed that sport and recreation injuries were the leading cause for their emergency room visits.

The Children's Hospital Injury, Research and Prevention Program (CHIRPP) has also collected some data on childhood sport and recreation injuries. Investigation of data shows a yearly increase in trampoline injuries, the largest number of which occur in Calgary and Vancouver. There is a very low sex ratio in children under the age of thirteen. Even toddlers are at risk from these injuries which tend to be more severe than the database average; as measured by the nature of the injuries and the general nature of the treatment.

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Project funding is also in the process of being confirmed for a pilot project of data collection for sport and recreation injuries. This project has been submitted by the Sport Medicine Council of Alberta, the Injury Awareness and Prevention Centre, the University of Alberta Faculty of Physical Education and Recreation, and the Department of Health Services Administration and Community Medicine. The project will take a sampling of injury statistics from patient charts at selected hospitals across the province. This will provide information on numbers, rates, and types of injuries incurred during participation in various sport and recreation activities in Alberta. It is hoped that through this study an impetus can be created for ongoing data collection for sport and recreation injuries.

Many injury prevention programs, services, and resources have been developed and are being delivered in Alberta, which is illustrated by the enclosed resource list. Our continuing drive to collect data will assist us, not only in determining what injury prevention priorities need to be addressed, but also how effective they have been. These efforts will make sport and recreation safer, and ultimately healthier.

SPORT AND RECREATIONAL INJURIES WORKGROUP

INTRODUCTION

In 1987, Statistics Canada conducted a general social survey that revealed sport and recreation activities as having the second most frequent number of injuries. These activities were responsible for 29% of injuries to adults. Among people aged 15 to 24, sport and recreation incidents were responsible for 42% of all unintentional injuries.[1]

Sport and recreation injuries accounted for approximately 8.7 million activity-loss days and 1.5 million bed-disability days in 1987. These injuries also represented 31% of activity-loss days and 26% of bed-disability days for people aged 15 to 24.[1]

A study conducted by the Regie de la securite dans les sport du Quebec reported in 1987 "the overall cost of injuries and deaths resulting from sport and recreational activities in Quebec is estimated at $184 million".[2,3] These figures were determined from 239,000 participants who consulted health professionals to attend to their injuries. The study concluded that sport and recreational injuries accounted for 25% of all injuries in Quebec. The economic and social costs of sport and recreational injuries are sufficient to warrant special attention to this area.

The Ontario Minister of Tourism and Recreation has conducted a similar study with the assistance of the Canadian Sports Spine and Head Injuries Research Centre.[4] A measure of the seriousness of the problem can be seen in these facts:

- 1.3 million participation-related injuries occurred in 1986.
- Economic costs for sport and recreation injuries exceed $663 million per year.
- 530 catastrophic incidents, including 87 deaths and 48 cases of paralysis, occurred in 1986.
- Half of all serious school-related injuries are the result of athletic activities
- 25% of all emergency ward cases are sports and recreation related.

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The trend towards increased participation in sport and recreation activities is expected to continue as a result of availability of more leisure time, growing awareness of health benefits and greater promotion of participation. Unfortunately, the enjoyment of this type of activity quickly diminishes when the safety and well-being of the participant is at risk. Each individual must be conscious of what safety precautions to undertake, since a tremendous number of injuries occur in both unsupervised and supervised settings.

Sport and recreation participants and organizations frequently neglect to ensure that safety receives a high priority within the management structure of their events. Injuries can be categorized as occurring in the following four areas:

- Equipment
- Facilities
- Behavior and attitude
- Quality of leaders

Making individuals aware of the degree of risk of injuries from sport and recreation activities through national injury control objectives is a start to reducing their incidence.

ISSUES RELATED TO SETTING OBJECTIVES

Data Availability

Specific sport and recreation categories are currently non-existent in the International Classification of Disease E-code system. A further breakdown of injuries by sport is necessary for planning prevention interventions. National and provincial injury data collection systems for sport and recreation need to be developed. The following actions must be taken to provide adequate data sources for sport and recreation.

- All Canadian hospitals should be coding injuries by specific sport and recreation categories for all hospitalizations and emergency department visits. This could be accomplished by modifying the existing International Classification of Disease E-Code (mechanism of injury code) system. This would provide

information primarily concerned with the frequency and diagnosis of injuries requiring medical treatment. A health care cost estimate could also be assessed for acute sport injuries through this data source.

- A national athletic injury registry should be developed that will collect injury data from all school and community youth sport groups across Canada in a uniform manner. This may be accomplished by modifying existing injury/accident reporting systems to provide standardized information about the frequency, mechanism and anatomical distribution of injuries.

- A national survey should be used to collect data regarding adult recreation and sport injuries on a regular basis. This may possibly be conducted in conjunction with another national survey. Data from this source would indicate how much injuries affect sport and recreation participation patterns. It would also capture data concerning adult sports injuries not treated in hospitals or emergency departments.

Level of Participation

Individual involvement in sport and recreation occurs at many different levels and involves a tremendous diversity of participants. Activities may occur in structured or unstructured settings, and may be recreational or competitive. In some cases, a recreational activity such as snowmobiling may be the mode of transportation for other individuals. The "issues for active consideration" and objectives were set with this diversity of participants in mind.

Legislation

There is a need for legislation objectives to assist in the reduction of sport and recreation injuries involving equipment and facilities. Again, the necessary data was not available to set measurable objectives and thus became part of our "Issues for Active Consideration" seciton.

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Risk Management Education

In trying to set measurable objectives to reduce injuries in sport and recreation activities, all agreed there is a need to develop and promote injury prevention and safety information to participants. Behavior and attitudes need to be shaped so we may participate safely; these include playing fair, handling aggression, controlling substance abuse, meeting safety standards when using equipment and facilities, and having quality leaders with appropriate training in the applicable activity. Methods must be established and agencies identified to monitor the progress in this very important aspect of injury control.

ISSUES FOR ACTIVE CONSIDERATION

The following points have been raised as areas for concern. Unfortunately, no baseline data was available to set measurable objectives for these points but they were expressed as issues for active consideration and used as strategies to reduce injuries.

Playground Injury Reduction Strategies

- Ensure compliance with CSA playground standards in all public and school playgrounds

Bicycle Injury Reduction Strategies

- Make approved bicycle helmets mandatory for both practices and events at the competitive level.

- Make the use of approved bicycle helmets a mandatory condition of participation at all mass participation cyclethon events.

- Establish/develop legislation to ensure that bicycles are sold or rented only if proof of ownership of a helmet is demonstrated or a helmet is concurrently purchased/rented.

- Establish/develop legislation for minimum safety standards for bicycle construction.

Drowning Reduction Strategies

- Increase the number of education and awareness programs about the use of pool barriers, fences and water safety.

- Increase law enforcement of existing standards, e.g., domestic pool installation.

- Increase the mandatory wearing of personal floatation devices by individuals when on water through education, legislation and enforcement.

Off-road Vehicles Injury Reduction Strategies

- Increase the number of safety programs that address the use of off-road vehicles in all communities with high use of off-road vehicles and excess mortality and morbidity rates.

- Ensure that the government of Canada include off-road vehicles in the Canadian Motor Vehicles Safety Act so standards on stability and safety devices for off-road vehicles will be specified.

Injury Prevention Program Strategies

- Increase the completion of pre-season medical examinations by physicians.
- Increase the completion of participants medical history cards and have them on-site.
- Increase the availability of first-aid kits on-site.
- Increase the number of education and awareness programs about sport and recreation injury prevention.
- Increase the number of coaches and officials trained in CPR and sports first aid.
- Increase use of effective head, face, eye, mouth and neck protection in sports.
- Develop and use safety standards for facilities and equipment used for practices and events.

- Increase use of emergency protocol at practices and events.
- Promote initiatives to reduce injuries resulting from aggressive (violent) behavior in sports.
- Increase the use of medical or paramedical personnel at events.
- Increase the completion of injury occurrence forms, maintain yearly statistics, and use for evaluation.

References:

1. Millar, W., and O. Adams. *Accidents in Canada.* Statistics Canada, February 1991: 68-71.

2. *Economic Costs of Injuries and Fatalities Resulting from the Practise of Sports and Recreational Activities in Quebec.* Regie de la securite dans les sports du Quebec, April, 1990.

3. *Objectif: Sante (Objective: A Health Concept in Quebec).* A Report of the Task Force on Health Promotion, Government of Quebec, 1984.

4. *The Report and Recommendations in Amateur Sport, Personal Fitness and Physical Recreation in Ontario, Volume II.* The Ontario Sport Medicine and Safety Advisory Board, 1987.

Sport Medicine Council of Alberta

The Sport Medicine Council of Alberta (SMCA) is an organization of sport physicians, sport physiotherapists, athletic therapists and sport scientists. The cooperative function of these individuals is to promote and coordinate the provision of sport medicine programs and services for the Alberta sport community. These professional members provide their services to assist in making Alberta a healthy and safe environment for sport and recreational activities.

SPORT MEDICINE SUPPORT PERSONNEL

The services of a sport medicine professional may be required on and off the field; and before, during and after the game. The most obvious services are a part of on site coverage for games, training camps, competitions and tours, such as the assessment and treatment of athletic injuries. Behind the scenes, a sport medicine professional can carry out pre-season medical examinations, physiological and psychological testing and consulting, ongoing medical care for athletes including nutrition assessments, counselling and drug testing.

EDUCATION PROGRAM

Education courses are available for those individuals interested in upgrading or developing their knowledge and skills in sport medicine. Courses include: *Athletic First Aid, Taping and Strapping, Sports Nutrition,* and *Drugs in Sport.*

MEDICAL EVENT COVERAGE

Assistance may be provided for ensuring appropriate medical coverage at events and competitions. An SMCA liaison will act as a consultant to the Games Medical Planning Committee; guidelines are provided in our Games and Competition Medical Handbook; pre-event workshops and training are available for medical volunteers; and assistance with recruiting medical personnel.

SPORT MEDICINE EQUIPMENT & SUPPLIES

Comprehensive professional medical kits for physicians and therapists can be borrowed from the SMCA. For the coach, athlete medical information cards are available. Also available is technical assistance with the development and purchase of sport specific medical kits.

DRUG EDUCATION

Educational information on drugs in sport can be obtained from the council. Formats include technical articles, individual consulting, drug testing, speakers and writers, resource materials for junior high school teachers and students, educational workshops and handbooks and fact sheets on performance enhancing substances.

Sport Medicine Council of Alberta

SPORTS NUTRITION

A variety of nutrition services are available with particular attention to the athlete's needs. The SMCA offers speakers and writers, resource information, individual consultation and educational workshops and handbooks.

CONFERENCE SUPPORT AND SERVICES

The SMCA hosts and promotes sport medical, paramedical and scientific conferences, symposia and lectures for sport medicine professionals, sport and recreational associations, and the general public.

SPEAKERS AND WRITERS BUREAU

Medical, paramedical and scientific professionals are available for sport associations' publications, symposia, training camps coaching clinics and technical seminars. Topic areas may include: Nutrition, Physiology, Psychology, Taping & Strapping, Emergency Protocol, Athletic Injuries, Drugs in Sport, Strength & Flexibility, Safety Standards, and Protective Equipment.

RESOURCE INFORMATION

The SMCA Resource Library has a variety of sport medicine materials available for loan: anatomical joint models, wall charts, educational packages, and audio-visual material. Also available is *Pulse*, a quarterly newsletter which highlights SMCA activities and current sport medicine information.

To access any of the programs or services of the SMCA, please do not hesitate to contact us.

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SPORT AND RECREATIONAL INJURIES WORKGROUP

RESOURCES

	Cost
ATHLETE MEDICAL INFORMATION CARDS	
Holds all vital emergency information on each athlete; Contact name, blood type, etc. (25 cards per pkg.)	5.00/pkg
ATHLETIC FIRST AID KIT	
Perfect for most teams and organizations. Includes tape, bandages, slings, etc. Kits can be custom designed for your needs.	165.00
A variety of Athletic First Aid supplies are kept on hand to restock your own first aid kit; prowrap, Tuf-skin, slings, etc.	varies
SPORTS NUTRITION RESOURCE BINDER	
Includes a variety of information on all topics of sports nutrition; pre/post event meals, hydration, travelling tips, etc.	25.00
CROSSING THE LINE PACKAGE	
Excellent classroom or lecture package on the straight facts about drugs in sport. Video appearances by Kurt Browning, Karen Percy, and Dr. Randy Gregg.	42.00
FLYERS	varies
Anabolic Steroids	
Exercising with Asthma	
Hydration	
Pre-Event Eating	
Prevention of Physical Activity Injuries	
Procedures for Conducting Announced Doping Control	
R.I.C.E.	
Ride Longer and Stronger	
Trampoline Safety	
POSTERS	2.50 for shipping
First Aid	
Steroids	
Recreational Drugs	
Nutrition	

SMCA
Sport Medicine Council of Alberta
11759 Groat Road, Edmonton, Alberta T5M 3K6
Phone: (403) 453-6636 Fax: 422-3093

TRANSPORTATION INJURIES WORKGROUP

WORKSHOP OUTLINE

Concurrent Workshop 1 - "The Alberta Scene: Who is Preventing Transportation-related Injuries" (Thurs., October 22, 1992 9:45 a.m. - 12:00 noon)

Purpose: to gain a more complete understanding of the traffic safety initiatives in Alberta that are currently underway or planned for the near future or who's doing what to prevent death and disability from this leading cause of injury in Alberta.

Description: Dr. Herb Simpson, Executive Director of the Traffic Injury Research Foundation will moderate a panel of speakers from Alberta who will be presenting a series of ten minute talks to provide an overview of the current state of traffic safety programs and initiatives in the Province. The panelists are as follows: Mr. Neil Warner describing the work of the Alberta Solicitor General's Office; Ms. Jackie Petruk and Mr. Scott Wilson describing the activities of the Coalition on Child Passenger Restraints; Mr. Ross Hogg of Alberta Transportation and Utilities presenting an overview of the role of his Department as well as the work of the Minister's Advisory Committee on Traffic Safety; Dr. Stewart Hamilton, the Director of Trauma services at University of Alberta Hospitals describing the work of the Provincial Advisory Committee on Trauma Services; Mr. Rob Taylor of the Alberta Motor Association discussing the traffic safety initiatives of this large consumer organization; and finally Ms. Lorna Stewart, Director of the University of Alberta Hospitals Injury Awareness and Prevention Centre, will be providing an update on the status of a provincial coalition on motor vehicle trauma. Workshop participants will also be given an opportunity at the end of the panel presentation to describe their work in this field. Time will be allowed for questions and discussion of the current state of traffic safety in Alberta.

Concurrent Workshop 2 - "What works in Preventing Transportation Injuries" (Thurs., October 22, 1992 2:45 p.m. - 4:30 p.m.)

Purpose: to gain insights into educational, legislative and technological strategies from around the world that are known to be effective at preventing traffic-related injuries.

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Description: During this session Dr. Herb Simpson, an internationally recognized researcher in the field of traffic safety, will provide an expanded version of his plenary session "What Works in Preventing Injuries? Principles of Success". The presentation will cover the current state of knowledge on what is effective at reducing traffic injuries including legislative, educational and technological strategies. Dr. Simpson has indicated that he will allow ample time for workshop participants to seek clearer understanding of effective traffic injury countermeasures.

Concurrent Workshop 3 - "Creating an Agenda for Action in Alberta" (Fri., October 23, 1992 9:15 a.m. - 11:15 a.m.)

Purpose: to create a broadly-based action plan for the next year on how workshop participants and others might work together to reduce injuries due to motor vehicle crashes in communities across the province on the journey to the year 2000 objective of a 20 percent reduction.

Description: Using this backgrounder document workshop participants will come together to develop an action plan for the next year to make some breakthroughs in reducing traffic injuries. The focus of the discussion will be how can we best use our limited resources to achieve reductions in traffic injuries. Dr. Herb Simpson will act as facilitator and consensus builder during this session.

TRANSPORTATION INJURIES WORKGROUP

INTRODUCTION

In May, 1991, the first National Symposium to Establish Injury Control Objectives for Canada for the Year 2000 was held in Edmonton, Alberta. This Symposium was an attempt to develop consensus around injury prevention priorities for Canada that might be used by the provinces/territories as a starting point to prepare a more detailed agenda for action on injury prevention. The Fourth Annual Injury in Alberta Conference has been organized around the injury control objectives presented in A Safer Canada, the proceedings of the National Symposium. This background paper is intended to provide the participants of the Transportation Injury Workshop with an overview of the current state of affairs in motor vehicle injury prevention in Alberta as well as a tentative action plan for reducing injury death and disability from motor vehicles. The overall purpose of the transportation injuries sessions is to build an agenda for action for Alberta around which people might work together to maximize limited resources and achieve at least a 20 percent reduction in traffic-related injuries by the year 2000.

WHERE WE ARE?

Dimensions of the Challenge:

Motor vehicle crashes are the leading cause of injury death in Alberta with approximately 500 Albertans killed each year on the province's roadways. Motor vehicles were responsible for 43 percent of all injury deaths in 1989. Injuries sustained in motor vehicle crashes are the leading cause of injury hospitalization among the 15 to 34 year old age group. For the year 1987, injuries due to motor vehicle crashes were the second leading cause of injury-related hospital admission for both males and females. Motor vehicle deaths and hospital admission rates decreased markedly between 1979 and 1982, especially among males and especially between 1981 and 1982. Thereafter the rates have remained stable. (Saunders and Flowerdew, Alberta Injury Mortality and Morbidity, December, 1991)

(Additional and more recent data on the extent and consequences of these injuries will be available to participants at the conference registration desk.)

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Cost Effective Prevention Opportunities:

The following information, which highlights the cost effectiveness of traffic safety initiatives, is excerpted from the American document "Position Papers from The Third National Injury Control Conference - Setting the National Agenda for Injury Control in the 1990s", April, 1991.

Motor vehicle injury prevention is a sound investment of scarce public health and highway safety dollars. Health economists have compared the estimated costs per life (and life year) saved by numerous public health programs. Such studies have consistently concluded that traffic safety programs are more cost effective than almost all other kinds of public health interventions. For example, Graham and Vaupel found that the median cost per life year saved for selected National Highway Traffic Safety Administration (NHTSA) programs was over 100 times less than for selected occupational and environmental health programs. (Value of a life: what differences does it make? Risk Analysis 1981; 1:89-95)

The cost-effectiveness of regulatory actions also varies tremendously, reflecting the poor allocation of society's resources for reducing risks. An example of this variation appears in the US Federal Budget for Fiscal Year 1992: on the average, spending $2 million regulating cancer risks posed by wood preserving chemicals prevents one cancer case every 2.9 million years, whereas the same amount spent on highway safety saves at least one life in just a few years. The evidence suggests that our limited public health resources could lower costs and save more lives if they were reallocated to favor more traffic safety investments.

Current Traffic Injury Prevention Initiatives in Alberta:

There are many, many initiatives in Alberta that focus on some aspect of the prevention of injury death and disability due to motor vehicle crashes. Some of the key organizations and groups are highlighted here. This is not an exhaustive inventory of who's doing what in this field. However, with the cooperation of workshop participants it might be possible to compile a more comprehensive inventory which could be used for identifying gaps and highlighting opportunities for collaboration among various groups in addressing this issue.

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ALBERTA SOLICITOR GENERAL INITIATIVES

The Impaired Driving Initiatives Grant Program

The Impaired Driving Initiatives Grant Program, established in 1988, is intended to facilitate development and delivery of community-based impaired driving countermeasures.

The program is aimed at community groups or non-profit organizations. These groups, when engaged in volunteer initiatives to prevent impaired driving in their communities, may receive a one time grant to assist them in the initial stages of these efforts.

The overall objectives to be met by proposed initiatives are:

1) to reduce the incidence of impaired driving in Alberta and the resulting deaths and injuries; and

2) to create a higher level of awareness among Albertans of the serious legal, social and economic impact of impaired driving.

Grant applications are reviewed by the Impaired Driving Countermeasures Committee and a recommendation for approval or rejection is made to the Solicitor General, who then makes the final decision.

To date, grants have been awarded for a diverse range of initiatives including conferences, impaired driving awareness programs for teens, Safe Grad manuals, Prevent Alcohol & Risk-Related Trauma In Youth (PARTY) programs and a rural safety essay contest.

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CHECKSTOP

Alberta's Checkstop Program, which has been in operation since 1973, is a combined enforcement and education program designed to deter people from drinking and driving. All vehicles passing through a Checkstop location are required to stop for a brief driver check. The police officer then determines whether the driver has been drinking, and may impose a 24-hour suspension or lay Criminal Code charges against the driver.

In addition to detecting impaired drivers as they pass through a Checkstop, the program provides a visible reminder to the public that impaired drivers will be caught.

To increase awareness, Checkstop is extensively advertised on highway signs, billboards, and banners, and at sporting events and trade shows.

An average of 464,000 vehicles per year were stopped at Checkstops between 1985 and 1990. During that time, 11,182 24-hour suspensions were issued and 19,689 Criminal Code charges were laid against impaired drivers.

THE SUSPENDED DRIVER VEHICLE SEIZURE PROGRAM

In December 1991, the Government of Alberta passed legislation to introduce the Suspended Driver Vehicle Seizure Program.

The program is aimed at deterring an increasing number of motorists who continue to drive while under licence suspension.

Under the program, vehicles driven by a suspended driver will be seized and impounded for 30 days. In addition, drivers may be fined up to $2,000, or jailed for not less than 14 days on the accompanying charge of Drive While Suspended. Conviction on this charge carries a mandatory six month licence suspension.

If a motorist with a suspended licence borrows a vehicle and is caught driving, the vehicle will still be impounded. The vehicle owner faces a fine of up to $2,000, or a jail term of up

to 14 days in default of payment, if it is shown that the owner knowingly lent the vehicle to a driver under suspension.

The program provides avenues for the return of a vehicle to the registered owner if he was not aware that the individual he lent it to was suspended. The registered owner may sign a statutory declaration to the effect that he unknowingly lent a vehicle to a driver under suspension.

If a vehicle owner did not realize his own licence had been suspended, he may state his case before the Driver Control Board. He must prove to the Board's satisfaction that he could not have known his licence was suspended.

THE DESIGNATED DRIVER PROGRAM

Launched in September 1989, the Designated Driver Program utilizes the theme "Round Up the Party Animals! Have a Safe Safari Home," to emphasize the separation of drinking and driving. The Program was developed by the Department of the Solicitor General in cooperation with a number of Alberta groups and organizations.

The Designated Driver Program is designed to:

- reduce the incidence of impaired driving,
- reduce the incidence of motor vehicle collisions, resulting injuries, property damage; and most importantly,
- save lives.

The Program puts the onus on groups to plan their outing in terms of getting home safely. One person from a group of guests at a licensed establishment, social function or private house party is designated as the group's driver, and does not consume any alcohol before, during or after the event. The designated driver accepts the responsibility for making sure the other group members arrive home safely.

Licensed establishments that participate in the program agree to provide free non-alcoholic beverages to the designated driver in each group.

The Department of the Solicitor General provides licensed establishments with the posters, tent cards, server and designated driver badges utilized in the program, at no charge.

THE VEHICLE IMMOBILIZATION PROGRAM

Mechanical immobilization of vehicles commenced as a pilot project in 1989. Under this program, police may order the installation of an immobilization device, commonly known as a "boot", on vehicles driven by an individual charged with impaired driving. The purpose of the program is to prevent a driver from using the vehicle to commit another impaired driving offence within a 24-hour period of the initial offence.

In addition to serving as an enforcement method, the impact of seeing an immobilization device on a vehicle serves as a deterrent to other drivers, since it is a visible reminder that impaired driving is a crime.

Although some Canadian and American jurisdictions use immobilization to enforce the payment of parking tickets, Alberta is the only jurisdiction to use the device for impaired driving offences.

The program was expanded after successful evaluation of the pilot project, and is now operational in eight Alberta communities: Calgary, Edmonton, Fort McMurray, Grande Prairie, Lacombe, Lethbridge, Medicine Hat and St. Albert.

IGNITION INTERLOCK

This program, which commenced as a pilot project in April 1990, allows the Driver Control Board to order an alcohol sensing device to be installed on the vehicle of a previously convicted impaired driver, as a condition of licence reinstatement.

Participation in the program may commence after the Court imposed driving prohibition expires. Participation is limited by law to those convicted under sections 253 and 254 of the Criminal Code.

The interlock technology requires that drivers pass a breath alcohol test before the vehicle will start, and at variable intervals while the vehicle is being operated. Once the vehicle has been started, if a driver does not provide a breath sample at the required time, the vehicle's horn will be activated, drawing attention to the vehicle. A computerized log kept by the interlock device provides notification to the Motor Vehicles Division if a driver tampers with, or attempts to by-pass, the interlock device.

THE ADMINISTRATIVE LICENCE SUSPENSION PROGRAM

The Administrative Licence Suspension Program has been in effect since August 1989. Under the program, the Registrar of Motor Vehicles immediately refers all cases where a driver was charged with impaired driving causing death or bodily harm, to the Driver Control Board. The Board then determines whether to suspend the driving privileges of the driver pending the outcome of the court case.

In 1990, the right of the Driver Control Board to take away a licence before a driver is actually convicted of an offence was challenged in Court. Alberta's Court of Queen's Bench ruled that the Board was acting within its authority by removing driving privileges prior to the outcome of the court case.

THE REPORT AN IMPAIRED DRIVER (RAID) PROGRAM

The RAID program was implemented in June 1991. The purpose of the program is to provide information to private citizens on how to report impaired drivers to the police.

RAID brochures and posters were developed to tell citizens:

- how to spot an impaired driver on the road;
- which telephone numbers to call to inform police; and
- what information the police will require, such as location of the driver, direction of travel, and the vehicle's licence plate number.

The brochures are mailed to vehicle owners with their registration renewals. Arrangements have been made with retail merchants to display RAID posters in locations throughout Alberta.

THE ENHANCED IMPAIRED DRIVING DETECTION PROGRAM

The Enhanced Impaired Driving Detection Program was implemented as a six month pilot program in Calgary and Edmonton in December 1991. The Program, the first of its kind in Canada, uses new technology to assist peace officers in making the determination that a driver has consumed alcohol. The new technology, in the form of a passive alcohol sensor, takes a sample of normally exhaled breath with a minimum of intrusion.

If the passive device, together with other observations, provides indications of alcohol use by the driver, an active breath sample using an Alert or Alco-Sur may be requested. If the Alco-Sur indicates a green or flashing green reading, the driver would be free to go. In the case of a yellow reading, the driver would be given a 24-hour suspension. If the Alco-Sur indicated a red reading, the individual would be asked to be tested on an approved breath alcohol screening device, commonly known as a breathalyser. If this device indicates a reading above the legal limit of .08, the driver would be charged under the Criminal Code of Canada.

Although Alberta's present Checkstop program is working well, research indicates that the most serious impaired drivers are often the best able to avoid detection in a Checkstop. Chronic alcohol abusers are accustomed to the presence of alcohol in their bodies. They do not show the normal signs of impairment corresponding to their actual blood alcohol levels. In a Checkstop situation, where an officer must make a quick decision on a driver's condition, these serious alcohol abusers may slip through. Passive alcohol sensors will help police identify these individuals, as well as any other who might be tempted to evade detection.

TRANSPORTATION INJURIES WORKGROUP

THE IMPACT IMPAIRED DRIVING COURSE

As of July 1, 1992, the Department of the Solicitor General assumed responsibility for the administration of the IMPACT impaired driving course. Second and subsequent impaired driving offenders are required to attend the course as a condition of licence reinstatement. This internationally recognized residential weekend program for repeat offenders was formerly administered by the Alberta Alcohol and Drug Abuse Commission.

The name IMPACT is an acronym for Insight, Motivation, Progress, Assessment, Counselling and Treatment. The primary purpose of IMPACT is to foster impaired drivers' personal exploration of their alcohol and other drug use. The course uses group dynamics to influence perceptions of alcohol use and the risk involved, thereby increasing the likelihood that the offender will take action to deal with his alcohol problem. The impaired driving offence provides an opportunity to intervene in the alcohol use of impaired drivers before even more serious problems develop.

The program is being delivered under contract with the Alberta Motor Association.

THE PLANNING AHEAD IMPAIRED DRIVING COURSE

As of July 1, 1992, the Department of the Solicitor General assumed the administration of the Planning Ahead impaired driving course. The one day course is a licence reinstatement requirement for first time impaired drivers. Previously the course was administered by the Alberta Alcohol and Drug Abuse Commission.

The course focuses on both attitudes and behaviours in order to help participants avoid future impaired driving incidents. During the course, participants are provided with information about the law, impairment, alcohol use and licence reinstatement. The course also provides a context within which participants can evaluate their drinking and driving and develop ways to personally avoid impaired driving in the future. The course content promotes responsible use of alcohol, especially in relation to driving.

Planning Ahead is currently delivered under contract with the Alberta Motor Association.

TRANSPORTATION INJURIES WORKGROUP

An update from the Solicitor General's Office on Impaired Driving in Alberta

I. EXECUTIVE SUMMARY

Impaired driving is a problem which affects all Albertans. In response to the concerns of citizens, the Department of the Solicitor General initiated a program of impaired driving countermeasures to reduce the incidence of this crime.

A. Collision Fatalities and Injuries

1. In 1984, 33 percent of all traffic collisions in Alberta were alcohol-related. By 1990, that figure had been reduced to 28 percent. The number of alcohol-related fatal collisions has decreased by 24.8 percent between 1984 and 1990. Alcohol-related injury collisions declined by 19.3 percent in the same period.

2. The number of people killed in alcohol-related collisions was reduced by 27.3 percent between 1984 and 1990, from 154 to 112, respectively.

3. Involvement of drinking drivers in fatal or injury collisions declined slightly between 1984 and 1990. The number of drinking drivers involved in fatal collisions decreased from 26.4 percent to 22.1 percent, while drinking drivers involved in injury collisions declined from 11.2 percent to 9.4 percent.

4. The 25 to 29 age group accounted for the greatest portion of drinking drivers in fatality and injury collisions. However, when the number of licensed drivers is controlled, the 18-19 age group emerges as having the highest rate (3.1) of drinking drivers involved in fatality and injury collisions per 1000 licensed drivers. This age group also experienced a 32.6 percent decline in the rate of involvement, from 4.6 per 1,000 licensed drivers in 1984, to 3.1 per 1,000 licensed drivers in 1990.

B. Enforcement Data

1. The number of people charged with impaired driving in Alberta decreased by 31.6 percent from 1984 to 1990. This decrease was the second largest in Canada for that period.

2. Alberta's rate of persons charged with impaired driving is the second highest in Canada (excluding the territories), at 689 per 100,000 population.

3. Although the number of vehicles stopped through the Checkstop Program increased between 1984 and 1990, the rate of criminal code charges laid as a result of this activity has decreased. The rate of criminal code charges has declined sharply from 114 per 10,000 vehicles stopped in 1990.

4. The number of driver licence suspensions occurring under the Motor Vehicle Administration Act declined by 32 percent between fiscal years 1985-86 and 1990-91. The proportion of drivers whose licences were suspended for a repeat offence fell from 33 percent in 1988 to approximately 29 percent in 1990.

5. The number of offenders incarcerated in Alberta Correctional Centres for impaired driving offences increased between fiscal years 1985-86 and 1990-91. Specifically, a 67.8 percent increase in the number of incarcerated offenders occurred between 1985-86 and 1990-91.

6. Sentence lengths have increased in the "over 1 year" and "less than 1 month" categories. The number of drivers receiving sentences in the remaining categories of "1-3 months", "3-6 months" and "6-12" months have decreased between 1985-86 and 1990-91.

C. What has been Accomplished

1. The Department of the Solicitor General has taken a leading role in Alberta in developing and implementing impaired driving countermeasures. More than 20 initiatives have been introduced in the past four years to reduce the incidence of impaired driving. These initiatives are part of a multifaceted approach, involving prevention, education and enforcement.

2. As part of a continued commitment to reduce impaired driving, the Department of the Solicitor General will focus on delivering existing programs that have proven successful in combating this problem.

D. Conclusion

1. The number of alcohol-related fatal and non-fatal injury collisions decreased between 1984 and 1990, as did the resulting deaths and injuries. However, young people are still over-represented in alcohol-related collisions.

2. The number of impaired drivers detected through Checkstop activity has declined, as has the number of charges laid through routine enforcement. However, the people that are charged face stiffer penalties, particularly in the form of jail terms.

CURRENT ALBERTA MOTOR ASSOCIATION TRAFFIC SAFETY INITIATIVES

Driver Education/School Patrol

The Alberta Motor Association offers driver education programs to novice drivers, senior drivers, and to specialized drivers (oilfield etc.).

As well, the AMA offers its school patrol program. Every year, thousands of Albertan youngsters participate in this safety program which teaches them elementary road safety rules.

These patrollers ensure the safety of their fellow students and others at nearby pedestrian crossings and raise driver awareness of pedestrian safety in these communities. Since the program began more than fifty years ago, not one person has been killed or injured at these patrolled pedestrian crossings.

The AMA has and continues to encourage:

1) Uniform standards for the examination and licensing of all drivers;

2) Mandatory re-training for all drivers;

3) Expanded curriculum for novice drivers' courses to include alcohol and drug abuse and impaired driving;

4) Adoption of a zero blood alcohol content stipulation to the conditions for retention of probationary drivers licenses.

Impaired Driving Programs

The Solicitor General's Department offers two (2) Impaired Driving intervention programs, both of which are administered and delivered by the Alberta Motor Association. Approximately 8,500 Albertans participated in these courses in 1991.

Planning Ahead, an eight (8) hour program, is aimed at drivers convicted of their first impaired driving offence. The course employs a lecture format and includes group discussion and videos. Participants are taught how to plan ahead to avoid a situation in which they may drink and then drive.

Impact is a weekend long program aimed at repeat impaired drivers. This program uses small group dynamics in assisting participants to examine their own behavior, attitudes, and feelings about drinking and substance abuse. Unlike Planning

Ahead, Impact is an intensive, internal learning experience which requires participants to fully involve themselves in a self examination process. Impact participants are helped to set realistic goals for themselves and are introduced to various support agencies and networks.

Additionally, the AMA supports:

1) Increasing the legal drinking age to nineteen (19);

2) Including alcohol/drug education throughout the school curriculum from kindergarten to grade twelve (12);

(3) Restricting the advertising of beer and wine on television.

Child Restraints

As part of an agreement with Transport Canada, the Alberta Motor Association distributes information regarding child restraints to the general public and a wide variety of interested groups. Consumers are informed about selection, installation, and proper use of child restraints and are kept up to date on public notices concerning these devices. The AMA provides province wide access to this service using a toll free phone line. Across the province, this service may be accessed at 1-800-222-6578; in Edmonton and area consumers may call 430-6800.

The AMA encourages:

1) Development of uniform design standards for child restraints;

2) Legislated use of booster seats for children in the 18 kg to 35 kg weight range;

3) Increased levels of child restraint law enforcement.

Additionally, the AMA is involved heavily with the Coalition on Child Passenger Restraint and its efforts to increase correct usage of child restraints in Alberta.

TRANSPORTATION INJURIES WORKGROUP

ALBERTA AUTO INSURANCE (by Alan Wood, Insurance Bureau of Canada)

The automobile insurance industry in Alberta has gone through a difficult period during the past 5 years, with claims expenses exceeding premium income each year since 1986. The results of an Insurance Bureau of Canada survey of member companies indicates that the net industry loss on automobile insurance in Alberta for 1991 was approximately $155 million after operating expenses and investment income were factored in. The estimated net loss for 1989, 1990 and 1991 combined is at least $330 million.

The poor results are due to three major factors. A serious weather related event has occurred somewhere in Alberta each year, beginning with the Edmonton tornado in 1987. A significant increase in automobile theft claims has also occurred, with Edmonton and Calgary both experiencing a 30% plus increase in stolen automobiles during 1991 as compared to 1990.

Finally, the cost of bodily injury claims has continued to escalate at a pace far beyond the rate of inflation. In 1990, the average cost of a third party liability claim (injury or property damage to the innocent driver in a collision) was 47% higher than the corresponding 1986 cost. For comparison purposes, the cost of settling collision damage claims increased only 22% during the same period. In recent years, the average injury claim has been increasing at a rate of about 13% annually, to the point where the average injury settlement by insurers in Alberta now exceeds $20,000.

Drivers who consistently cause traffic collisions or who have a poor record of traffic infractions do pay higher insurance premiums than those who remain collision free. However, this does not seem to deter them from driving or from improving their driving habits and skills.

The Insurance Bureau of Canada has long been supportive of traffic safety initiatives designed to reduce collision frequency. We are presently promoting the concept of a graduated licensing system for new drivers as a countermeasure to the over representation of new drivers in traffic collisions. Under this system, new drivers would have restrictions placed on their licence that limit where, when and

under what circumstances they could drive. These restrictions would gradually be removed as they obtain driving experience.

We also support increased penalties for non use of vehicle restraint devices, stricter enforcement of traffic violations that are the leading causes of traffic collisions, a mandatory vehicle inspection program and other safety initiatives designed to reduce the frequency and severity of traffic collision.

ALBERTA TRANSPORTATION AND UTILITIES INITIATIVES

Transportation Safety Branch

The Transportation Safety Branch, the provincial government's traffic safety coordinating body, is responsible for reducing the number of motor vehicle collisions, injuries and deaths in Alberta. Through inspection, legislation and the development of educational and informational programs, this branch provides direction in the safe transportation of goods and people on Alberta highways and provincially regulated rail lines.

This branch is also responsible for setting policy and awarding carrier safety ratings for administering the National Safety Code, a Canada-wide program developed to improve the mechanical fitness of vehicles, and the driving skills and attitudes of commercial vehicle drivers.

Through its Safety Policy and Development section, it also provides safety policy development and highway safety engineering recommendations to improve motorist safety. This includes on-going policy analysis, development and direction to solve motorist safety problems, and the enhancement of collision data collection and analysis.

Safety Branch's Safety Standards and Records section works with other groups having common interests in vehicle safety provincially and nationally; develops technical and professional standards for vehicle inspection programs such as those required by the Written-Off Motor Vehicles Program and the Commercial Vehicle Inspection Programs; and maintaining technical information standards for the carrier and operator profile data bases.

The Safety Education and Programming section develops educational and information programs to promote traffic safety, focusing on program development in a number of areas such as pedestrian safety, seat belt safety, school bus safety, bicycle safety. This is accomplished through the provision of a number of programs:

- Δ Mobile Safety City teaching pedestrian safety to ECS and Grade 1 students
- Δ Winter Driving Program;
- Δ School Bus Evacuation Program;
- Δ General School Bus Safety Program;
- Δ Bicycle Safety Program;
- Δ Seat Belt Safety; and
- Δ Child Car Safety Seat Program.

Transportation Safety Branch's Rail Safety section is responsible for developing and administering a new provincial rail safety program. This follows a recent Supreme Court decision making provincial governments responsible for railways incorporated under provincial legislation.

These provincial railways include short-line public carriers (Central Western Railway & Alberta Railway Excursions), private railways (which include 100 industrial spurs around the province), and amusement passenger railways (i.e. Fort Edmonton, Calgary Heritage Park) operating throughout Alberta. Concentrated efforts are being made into updating the Alberta Railway Act and developing the province's new railway safety program to ensure public safety.

MINISTER'S ADVISORY COMMITTEE ON TRAFFIC SAFETY

On September 16, 1991, the Honourable Al "Boomer" Adair, Minister of Transportation and Utilities announced the formation of his Minister's Advisory Committee on Traffic Safety. This committee is made up of representatives of traffic safety interest groups including police forces, motor associations, safety councils, the driving school industry and the automobile insurance industry along with personnel from Alberta Solicitor General and Alberta Transportation and Utilities. The mission of the committee is "to recommend

specific strategies, policies and program initiatives to the Minister of Transportation and Utilities related to Highway Safety through consultations with private sector, government agencies and the exploration of existing programs". The committee is chaired by the Minister.

Since its inception, the committee has held a number of meetings in Edmonton. Under the direction of the committee, staff from Alberta Transportation and Utilities have developed a short range program and a long range program aimed At improving traffic safety in Alberta. In general terms, these plans include public information programs, enforcement programs and safety environment improvement programs.

Under the general direction of the committee, staff of the department are now "fleshing out" these plans, developing specific programs, work schedules and budgets. There will be announcements by the Minister from time to time in the coming months as these programs go "on stream".

It is anticipated that the initiatives developed and coordinated by the Minister's Advisory Committee on Traffic Safety will have a significant impact on road safety in Alberta.

WHERE WE WANT TO BE

Year 2000 Injury Control Objectives for Transportation Injury Prevention

A key focus of the National Symposium to Establish Injury Control Objectives for Canada for the Year 2000 was the area of transportation injury prevention. As noted in the preamble to the findings of that workgroup, motor vehicle-related injuries are by far the leading cause of transportation fatality, accounting for 89 percent of all deaths due to transport activities from 1984 to 1988. The objectives and issues requiring active consideration proposed by the Symposium participants now need to be taken the next step of developing detailed strategies and action plans which are appropriate for Alberta to move towards achieving the overall injury reduction objective of 20 percent less motor vehicle-related injury deaths and hospitalizations by the year 2000. For the purposes of this background paper and the Transportation Injury Prevention Workshop at the Fourth Annual Injury in

Alberta Conference, Injury prevention for other means of transportation (i.e. rail, air and marine) will not be addressed. See Attachment 1 for a copy of the Report of the Transportation Work Group contained in the proceedings of the National Symposium, A Safer Canada - Year 2000 injury Control Objectives for Canada.

TRANSPORTATION INJURIES WORKGROUP

REPORT OF THE TRANSPORTATION WORK GROUP

1. Introduction

In Canada from 1984 to 1988, about 38% of the deaths due to injuries took place while people were engaged in transportation activities.[1] Air, rail and marine transportation accounted for about 11% of these transportation fatalities, while motor vehicle collisions caused the remaining 89%. Because of the preponderance of motor vehicle deaths, they became the main focus of the symposium's objective-setting efforts to control and reduce transportation deaths. Each year, over 4000 Canadians die because they were involved in motor vehicle crashes.[2]

To place the incidence of morbidity due to motor vehicle collisions into perspective, severity notwithstanding, motor vehicle collisions accounted for about 12% of all non-fatal injuries in Canada from 1983 to 1987.[1] Each year, over 45 000 Canadians are injured in motor vehicle crashes.[2]

2. Issues Related to Setting Objectives

A central issue that emerged when trying to set objectives was how best to define "high-risk" situations and behaviour. Different methods of measuring risk and different perspectives often produce conflicting priorities. For example, older drivers would be considered a particularly vulnerable group of road users, if risk were defined in terms of a common transportation index, such as deaths or injuries per unit of distance travelled. On the other hand, if risk were defined in terms of a common health-care index, such as deaths per 100 000 population, older adults (if grouped as all those over the age of 65 years), would be viewed as a relatively low-risk group when compared to young adults. As a further illustration, while children account for a very small proportion of the total road toll, collisions are the leading cause of their death: from one perspective they are a low priority, and from another, they are a high priority.

To provide a consistent frame of reference, injury rates per 100 000 population were used to assess the relative importance of targets for specific population groups. Such an approach leads to the conclusion that some groups, like children and older adults, are low-risk and this would tend to eliminate them as primary targets for injury reduction. However, they are included in the list of objectives because the young are largely unable to protect themselves and road crashes continue to be a leading cause of their death, and because the representation of seniors in the population is increasing significantly and their contribution to the road toll will grow. As well, when the age-specific death rates (for motor vehicle deaths including pedestrian deaths) for the 65+ group are broken down by ten-year age spans, a different picture emerges. The 15-19 and 20-24 age group rates are higher than the 65-74 and 75-84 group, but the 85+ group has the highest rate of all. After 75 years of age, older adults are not a low-risk population for motor vehicle-related deaths.

Trying to set measurable objectives for reducing the incidence of motor vehicle injuries and deaths among native Canadians was difficult because there was no known source of information on the rate of injury and death among non-status Indians. Because data are available for status Indians, only this group is included in the objectives, even though the intent of the objectives is to reduce death and injury among both status and

non-status native Canadians. If reductions in death and injury are realized among status Indians, it is expected that there will be similar reductions among non-status Indians.

As there was no known source of reliable data on long-term disabilities in Canada, no measurable objectives were set for minimizing long-term disabilities due to motor vehicle crashes. It was agreed that all injury-reduction initiatives should focus primarily on those injury events that are most likely to have serious long-term effects, such as head and spinal cord injuries.

In defining motor vehicle, it was decided that bicycles and off-road vehicles should be included in the definition. However, because these modes of transportation are predominantly used in recreational and community activities, objectives for reducing injuries caused while riding bicycles and off-road vehicles were established by the Sports and Recreation and Home and Community work groups.

3. Issues Requiring Active Consideration

a) **Increased educational programming about the risk of injury associated with the operation of motor vehicles.**

Members of the work group identified the significant role that educational programs play in reducing injury death and disability. The perception of risk of sustaining adverse health consequences associated with operating a motor vehicle is disproportionately low when compared to more topical health risks such as AIDS. Educational programs that address this distorted perception of risk are required and should be directed towards elementary and secondary school students. Since there are no baseline data on the current level of motor vehicle injury prevention (traffic safety), it will be necessary to conduct an inventory of current programming. The Canadian Association for School Health (CASH), a national coalition that is striving for comprehensive school health, was identified as an agency that is ideally positioned to conduct this baseline inventory and to monitor increased programming in this area.

2. **Identify and implement effective road user skill development and training programs to minimize the risk of injury death and disability due to motor vehicle crashes.**

Training of road users in the skills required to be effective, safe users is a critical component of a comprehensive approach to improving the current level of road safety. Unfortunately, the current level of road user skills is unknown, as well as the range and type of programs available across Canada. The work group identified the need to establish baseline data in these two areas: skill level of road users; and road user training and skill development programs. It will also be necessary to conduct literature review studies to determine which road user training programs are most effective. The work groups recommended that the Canadian Council of Motor Transport Administrators (CCMTA) take the lead in this activity, in collaboration with the Canadian Automobile Association (CAA), the Health Promotion Directorate of Health and Welfare Canada, and the Driver Training Association.

References:

1. Personal Communication, Transport Canada.
2. Canadian Mortality Database. Personal Communication. Laboratory Centre for Disease Control, Health and Welfare Canada.

TRANSPORTATION INJURIES WORKGROUP

TRANSPORT INJURY CONTROL OBJECTIVES — REDUCTIONS

OBJECTIVES	BASELINE PER 100 000 IN CANADA	TARGET % REDUCTION	DATA SOURCES	MONITORING AGENCIES
1.0 Reduce fatal injuries from transportation crashes in all age groups	Unavailable	25%	Mortality Database	Statistics Canada, CCHI
2.0 Reduce injuries requiring hospitalization from transportation crashes in all age groups	Unavailable	25%	Hospital Morbidity Database	CCHI
3.0 Reduce fatal injuries caused by motor vehicle crashes. Groups at risk:	15.38[1] (1988)	20% reduce to	Mortality Database	CCHI
3.1 15-24 years	31.77[1]	27.02		
3.2 0-14 years	5.78[1]	4.62		
3.3 65+ years	19.5[1]	15.6		
3.4 status Indian/Inuit	Unavailable	Unavailable		
4.0 Reduce injuries requiring hospitalization caused by motor vehicle crashes. Groups at risk:	182.61[2] (1988)	20% reduce to	Hospital Morbidity Database	CCHI
4.1 15-24 years	392.32[2]	313.16		
4.2 0-14 years	106.84[2]	85.47		
4.3 65+ years	146.55[2]	117.24		
4.4 status Indian/Inuit	Unavailable	Unavailable		
5.0 Reduce the proportion of fatal injuries due to alcohol-impaired drivers	46.5%[3] (1989)	20%	Traffic Injury Research Foundation (TIRF)	CCMTA
6.0 Reduce the number of casualty collisions caused by deficiencies in design, construction and maintenance of the road environment	4498[4] collisions (1989)	10% reduced to 4040 collisions	Road Accident Statistics in Canada	CCMTA

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TRANSPORTATION INJURIES WORKGROUP

TRANSPORTATION INJURY CONTROL OBJECTIVES — INCREASES

OBJECTIVES	BASELINE PER 100 000 IN CANADA	TARGET % INCREASE	DATA SOURCES	MONITORING AGENCIES
7.0 Increase use of occupant restraint systems	85.1% use[5] (1991)	Increase to 95% by 1995	Transport Canada	CCMTA
8.0 Increase the number of jurisdictions using administrative licence suspension as an impaired driving countermeasure	1 jurisdiction[6] (1990)	Increase to 50% (to 6 jurisdictions)	CCMTA	CCMTA
9.0 Increase the number of jurisdictions using vehicle impoundment as an impaired driving countermeasure	1 jurisdiction[6] (1990)	Increase to 50% (to 6 jurisdictions)	CCMTA	CCMTA
10.0 Increase the number of jurisdictions that have graduated licensing systems	0 jurisdictions[6] (1990)	Increase to 50% (to 6 jurisdictions)	CCMTA	CCMTA
11.0 Increase the number of jurisdictions that have mandatory motor vehicle inspections for all classes of vehicles	5 jurisdictions[6] (1991)	Increase to 100% (to 12 jurisdictions)	CCMTA	CCMTA

References:

1. Canadian Mortality Database. Personal Communication. Laboratory Centre for Disease Control, Health and Welfare Canada.
2. Canadian Hospital Morbidity Database. Personal Communication. Laboratory Centre for Disease Control, Health and Welfare Canada.
3. Traffic Injury Research Foundation (TIRF). H.M. Simpson, 1989.
4. Road Accident Statistics in Canada. Transport Canada, 1989.
5. Transport Canada.
6. Canadian Council of Motor Transport Administrators. Contact Audrey H. Lavoie, Director of Programs, 2323 St. Laurent Blvd, Ottawa, K1G 4K6.

TRANSPORTATION INJURIES WORKGROUP

Supplementary References for the Objectives:

1. Alberta Solicitor General. *Effective Strategies to Combat Drinking and Driving*. An edited collection of papers presented at the International Congress on Drinking and Driving, Edmonton, 1990.

2. The Canadian Council of Motor Transport Administrators. *Road Safety in Canada: The Challenge*. Symposium Proceedings, Montreal, 1988.

3. General Accounting Office. *Periodic Inspection Programs*. GAO/RCED-90-175, U.S.

4. Mayhew, D.R., H.M. Simpson, and K.N. Wood. *Alcohol Use Among Persons Fatally Injured in Motor Vehicle Accidents in Canada, 1989*. The Traffic Injury Research Foundation, March 1991.

5. *Provisional Licensing Programs for Young Drivers. Topical Papers by Licensing Experts, Including an Annotated Bibliography*. DOT HS 807 375, February, 1989, U.S.

6. Transport Canada. *Background Paper on Motor Vehicle Occupant Protection in Canada*. Report TP8087, 1986.

7. Traffic Injury Research Foundation of Canada. *New to the Road: Key Findings and Implications from an International Symposium*. Halifax, 1991.

APPENDIX 3

4th Annual Injury in Alberta Conference
21 - 23 October 1992
Budget

General Expenses	Actual	Variances
Scholarships	2,000.00	
Pre-conference flyers	200.00	(40.00)
Conference Brochures	2,185.68	(685.68)
Postage	3,500.00	
Faxes/Phones	800.00	
Office/Conference Supplies	200.00	
Media Coverage	668.97	(468.97)
Planning Meeting	200.00	
Speaker/Guest Gifts	876.33	(526.33)
Awards	1,910.24	(410.24)
Staff Support		(5,000.00)
Secretarial Support	832.00	(832.00)
Print Materials for Delegates	971.56	
Miscellaneous Supplies (paper supplies, mailing list, etc.)	358.96	
Printing of Open Lecture Tickets	52.00	
Sponsors' signs	507.18	
Conference Banner	111.00	
Alberta Data (Printing)	509.32	
Conference Bags	1,667.86	
Festival of Trees Tickets	280.00	
		$17,831.10

Hotel Expenses	Actual	Variances	
Hilton			
Meeting Room Rental	2,100.00	(13.50)	
Audio Visual	1,185.00	(985.00)	
Flip Charts/Easels/Table	550.00		
Miscellaneous (Photocopy)	50.25		
Catering			
Lunch (210 people) (22/10/92)	3,079.12		
Breaks (22/10/92)	1,456.13		
Office/Staff	90.27		
Lunch (180 people) (23/10/92)	4,481.55		
Breaks (23/10/92)	987.85		
Reception	1,149.42	(3,405.66)	
Goods & Services Tax	1,070.50		
Safe Community Meeting	163.88		
Planning Committee Speaker Meal	871.44		
			17,235.41
Convention Inn - Open Lecture			
Room Rental	400.00		
Pre Conference Reception	520.98		
Coffee Open Lecture	474.24		
Audio Visuals	75.00		
Goods & Services Tax	102.92		
			1,573.14
			$18,808.55

Speaker Expenses	Actual	Variances	
Leif Svanström	5,000.00		
Robert Conn	685.56	614.44	
Philip Schaenman	3,081.26	(1,781.26)	
Guy Régnier	1,186.02	113.98	
Shelley Karpmen	250.00		
Linda MacLeod	2,994.22	(1,694.22)	
Herb Simpson	1,705.03	(405.03)	
Maureen Shaw	1,500.00		
Occupational Health & Safety Facilitators Herb Buchwald Susan Ruffo Deborah Smith Vern Millard Dave Gibson	3,000.00		
Total Speaker Expenses			$19,402.09
Total Expenses			$56,041.74

Revenue

Registrations	14,137.61
Kids Care	2,900.00
Fire Fighters Burn Unit	600.00
President's Office	871.44
Alberta Occupational Health & Safety	8,000.00
Alberta Health	5,000.00
Recreation Parks and Wildlife Foundation	1,700.00
Trauma Association	1,000.00
Alberta Transportation & Utilities	3,400.00
	37,609.05
Worker's' Compensation Board	4,481.55
City of Edmonton	95.00
Registration fees outstanding	3,675.00
Total Revenue	**$45,860.60**

Total Revenue less expenses

45,860.60 - 56,041.74 = (10,181.14)

The deficit shown is due to costs incurred by the open lecture event. This event was not budgeted for in the original conference budget.